



# Specialized Philippine Enterprise Reference of Experts and Scientists (SPHERES)

INFORMATION RESOURCES AND ANALYSIS DIVISION  
Science and Technology Information Institute  
Department of Science and Technology  
Gen. Santos Ave., Bicutan, Taguig City, Philippines



## **ABOUT THE SPECIALIZED PHILIPPINE ENTERPRISE REFERENCE OF EXPERTS AND SCIENTISTS (SPHERES)**

The Division of Documentation of the National Institute of Science and Technology published the first volume of the Philippine Men of Science in 1964. It contained one hundred one bio-bibliographies of living men and women in the field of science and technology. It keeps track of our scientists and their contributions for the information and benefit of all. The compilation aims to provide interested users a useful and effective reference.

In 2012, the 24<sup>th</sup> volume of the Philippine Men of Science was uploaded online to make it more visible and accessible to users. Subsequently, the publication was renamed as the Philippine Men and Women of Science in 2013 to adopt a gender-sensitive title.

Today, the publication is given a new name – Specialized Philippine Enterprise Reference of Experts and Scientists (SPHERES).

The SPHERES brand introduces a new function with a new focus. When it comes to Filipino scientists and experts and their bio-bibliographic information, this compilation serves as a specialized reference for the public. Now with a gender-neutral emphasis and an inclusive sphere of influence, SPHERES is the name to remember.

Each volume of SPHERES consists of two issues annually.

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Environmental Science Management

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**Association Membership**

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**Trainings**

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**Papers Presented**

2010 Dedicatoria, R.M.M., Rebanco, C.M., Afuang, L.E., & Espaldon, M.V.O. (2010  
September September). Identifying Environmental Changes in Mt. Data Watershed, Bauko, Mt. Province, Northern Philippines: Implications to Sustainable Management, 4<sup>th</sup> Asian Rural Sociology Association (ARSA) International Conference, Legazpi City, Philippines.

**Publications**

2017 Gonzales, J.C.T., Tabaranza, D.G., Afuang, L.E., & Schultz, E., The Mindoro Warty Pig. In: Ecology, Conservation and Management of Wild Pigs and Peccaries, Melletti, M., & Meijaard, E., Eds., 2017.

2016 Gojo-Cruz, P.H., Afuang, L.E., Gonzales, J.C.T., Tabaranza, G.E., Alejado, M.D., Cajano, M.A.O., & Afuang, D.L.E., Diversity and distribution of herpetofauna in Balesin Island, Polillo, Quezon, Philippines. *Sylvatrop*, The

Technical Journal of Philippines Ecosystems and Natural Resources, 2016, 25:37-56.

- 2015 Lacaste, A.V., Afuang, L.E., & Gonzales, J.C.T., Comparison of Herpetofaunal Diversity Among Four Major Islands of Batanes Province, Northern Philippines. *Journal of Nature Studies*, 2015, 14(1):36-46.
- Diesmos, A.C., Watters, J.L., Davis, D.R., Alcala, A.C., Crombie, R.I., Afuang, L.E., Gee-Das, G., Sison, R.V., Sanguila, M.B., Penrod, M.L., Labonte, M.J., Davey, C.S., Austin Leone, E., Diesmos, M.L. Sy, E.Y., Welton, L.J., Brown, R.M., & Siler, C.D., Amphibians of the Philippines, Part I: Checklist of the Species. *Proceedings of the California Academy of Sciences*, 2015, 6(3, 20):457-539.
- Alviola, P.A., Macasaet, J.P.A., Afuang, L.E., Cosico, E.A., & Eres, E.G., Cave-Dwelling Bats of Marinduque Island, Philippines. *Museum Publications in Natural History*, 2015, 4(1):1-17.
- 2013 Böhm, M., Collen, B., Baillie, J.E.M., Bowles, P., Chanson, J., Coz, N., Hammerson, G., Hoffmann, M., Livingstone, S.R., Ram, M., Rhodin, A.G.J., Stuart, S.N., van Dijk, P.P., Young, B.E., Afuang, L.E., Aghasyan, A., Garcia, A., Aguilar, C., Ajtic, R., Akarsu, F., Alencar, L.R.V., Allison, A., Ananjeva, N., Anderson, S., Andrén, C., Ariano-Sánchez, D., Arredondo, J.C., Auliya, M., Austin, C.C., Avci, A., Baker, P.J., Barreto-Lima, A.F., Barrio-Amorós, C.L., Basu, D., Bates, M.F., Batistella, A., Bauer, A., Bennett, D., Böhme, W., Broadley, D., Brown, R., Burgess, J., Captain, A., Carreira, S., Castañeda, M.dR., Castro, F., Catenazzi, A., Cedeño-Vásquez, J.R., Chapple, D.G., Cheylan, M., Cisneros-Heredia, D.F., Cogalniceanu, D., Cogger, H., Corti, C., Costa, G.C., Couper, P.J., Courtney, T., Crnobrnja-Isailovic, J., Crochet, P.-A., Crother, B., Cruz, F., Daltry, J.C., Ranjit Daniels, R.J., Das, I., de Silva, A., Diesmos, A.C., Dirksen, L., Doan, T.M., Kenneth Dodd, C., Jr., Sean Doody, J., Dorcas, M.E., de Barros Filho, J.D., Egan, V.T., El Mouden, E.H., Embert, D., Espinoza, R.E., Fallabrino, A., Feng, X., Feng, Z.-J., Fitzgerald, L., Flores-Villela, O., França, F.G.R., Frost, D., Gadsen, H., Gamble, T., Ganesh, S.R., Garcia, M.A., Garcia-Perez, J.E., Gatus, J., Gaulke, M., Geniez, P., Georges, A., Gerlach, J., Goldberg, S., Gonzales, J.-C.T., Gower, D.J., Grant, T., Greenbaum, E., Grieco, C., Guo, P., Hamilton, A.M., Hare, K., Hedges, S.B., Heideman, N., Hilton-Taylor, C., Hitchmough, R., Hollingsworth, B., Hutchinson, M., Ineich, I., Iverson, J., Jaksic, F.M., Jenkins, R., Joger, U., Jose, R., Kaska, Y., Kaya, U., Scott Keogh, J., Köhler, G., Kuchling, G., Yusuf, K., Kwet, A., La Marca, E., Lamar, W., Lane, A., Lardner, B., Latta, C., Latta, G., Lau, M., Lavin, P., Lawson, D., LeBreton, M., Lehr, E., Duncan, L., Lipczynski, N., Lobo, A.S., Lopez-Luna, M.A., Luiselli, L., Lokoschek, V., Lundberg, M., Lymberakis, P., Macey, R., Magnusson, W.E., Luke Mahler, D., Malhotra, A., Mariaux, J., Maritz, B., Marquez, O.A.V., Marquez, R., Martins, M., Masterson, G., Mateo, J.A., Mathew, R., Mathews, N., Mayer, G., McCranie, J.R., John Measey, G., Mendoza-Quijano, F., Menegon, M., John Métrailler, G., Milton, D.A., Montgomery, C., Morato, S.A.A., Mott, T., Muñoz-Alonso, A., Murphy, J., Nguyen, T.Q., Nilson, G., Nogueira, C., Núñez, H., Orlov, N., Ota, H., Ottenwalder, J., Papenfuss, T., Pasachnik, S., Passos, P., Pauwels, O.S.G., Perez-Buitrago, N., Perez-Mellado, V., Pianka, E.R., Pleguezuelos, J., Pollock C., Ponce-Campos, P., Powell, R., Pupin, F., Diaz, G.E.Q., Radder, R., Ramer, J., Rasmussen, A.R., Raxworthy, C., Reynolyds, R., Richman, N., Rico, E.L.,

- Riservato, E., Rivas, G., da Rocha, P.L.B., Rödel, M.-O., Schettino, L.R., Roosenburg, W.M., Ross, J.P., Sadek, R., Sanders, K., Santos-Barrera, G., Schleich, H.H., Schmidt, B.R., Schmitz, A., Sharifi, M., Shea, G., Shi, H.-T., Shine, R., Sindaco, R., Slimani, T., Somaweera, R., Spawls, S., Stafford, P., Stuebing, R., Sweet, S., Sy, E., Temple, H.J., Tognelli, M.F., Tolley, K., Tolson, P.J., Tuniyev, B., Tuniyev, S., Üzümlü, N., van Buurt, G., Sluys, M.V., Velasco, A., Vences, M., Veselý, M., Vinke, S., Vinke, T., Vogel, G., Vogrin, M., Vogt, R.C., Wearn, O.R., Werner, Y.L., Whiting, M.J., Wiewandt, T., Wilkinson, J., Willson, B., Wren, S., Zamin, T., Zhou, K., & Zug, G., The conservation status of the world's reptiles. *Biological Conservation*, 2013, 157:372-385.
- 2012 Zhigang, Y., Ermi, Z., Haitao, S., Diesmos, A., Alcalá, A., Brown, R., Afuang, L., Gee, G., Sukumaran, J., Yaakob, N., Ming, L.T., Chuaynkern, Y., Thirakhupt, K., Das, I., Iskandar, D., Inger, M., & Inger, R., *Fejervarya cancrivora*. The IUCN Red List of Threatened Species 2004, 2012:e.T58269A11759436.
- Pagaduan, D.C., & Afuang, L.E., Understorey bird species diversity along elevational gradients on the northeastern slope of Mt. Makiling, Luzon, Philippines. *Asia Life Sciences*, 2012, 21(2):585-607.
- 2010 Dedicataria, R.M.M., Rebanco, C.M., Afuang, L.E., & Espaldon, M.V.O., Identifying Environmental Changes in Mt. Data Watershed, Bauko, Mt. Province, Northern Philippines: Implications to Sustainable Management. Proceedings of the 4<sup>th</sup> Asian Rural Sociology Association (ARSA) International Conference, 2010.
- 2008 Gonzales, J.C.T., Lacaste, A.V., & Afuang, L.E., Identifying Conservation Priorities For Terrestrial Vertebrate Fauna In The Batanes Islands, Northern Philippines. *Journal of Nature Studies*, 2008, 7(2):63-70.
- 2002 Diesmos, A.C., Brown, R.M., Alcalá, A.C., Sison, R.V., Afuang, L.E., & Gee, G.V.A., Philippine Amphibians and Reptiles: An Overview of Species Diversity, Biogeography, and Conservation. Philippine Biodiversity Conservation Priorities: a second iteration of the National Biodiversity Strategy and Action Plan, 2002:26-44.
- Banks, C., Afuang, L.E., & Redor, R.V., *The Kokak of Love*. Haring-Ibon, 2002.
- 1998 aya-ay Alviola, P., Gonzalez, J.C., Dans, A.T.L., Afuang, L.E., & Dimapilis, A.B., Herpetofauna of Puerto Galera, Mindoro Island, Philippines. *Sylvatrop*, The Technical Journal of Philippines Ecosystems and Natural Resources, 1998.
- 1995 Afuang, L.M.E., Sierra, Z.N., Mianda, L.S.P., Cuevas, V.C., Fajutagana, L.M., Madrigal, A.D., & Alip, A.S.Q., Sourcebook on Environmental Education. Lake Environment Social Mobilization Project (LESMP), University of the Philippines, Los Baños, 1995, 1.

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Applied Mathematics

Statistics

Combinatorics

Graph Theory

Dynamic Systems

**Employment**

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**Association Membership**

Member, Technical Committee for Mathematics, Commission on Higher Education

**Honors / Awards**

DOST Scholar, Department of Science and Technology

**Papers Presented**

2017 June 20-22 Asio, Y.J.Q., Antiquiera, E.D., & Aquino-Ruivivar, L. (2017 June 20-22). On a Variation of the Zero Divisor Graph and Some of Its Properties, DLSU Research Congress, De La Salle University, Manila, Philippines.

2016 March 7-9 Castañeda, A.T.S., Medina, M.A.S., & Aquino-Ruivivar, L. (2016 March 7-9). Notions of Domination for Some Classes of Graphs, DLSU Research Congress, De La Salle University, Manila, Philippines.

2015 March 2-4 Aquino-Ruivivar, L. (2015 March 2-4). Domination, Independence and Other Numbers Associated With the Intersection Graph of a Set of Half-planes, DLSU Research Congress, De La Salle University, Manila, Philippines.

2014 March 6-8 Destacamento, C.J., Rodriguez, A.D., & Aquino-Ruivivar, L. (2014 March 6-8). The Game Chromatic Number of Some Classes of Graphs, DLSU Research Congress, De La Salle University, Manila, Philippines.

- 2007 June 11-15 Gervacio, S.V., Lim, Y.F., & Ruivivar, L.A. (2007 June 11-15). Solvable Trees, Computational Geometry and Graph Theory - International Conference, KyotoCGGT 2007, Kyoto, Japan.

### Publications

- 2017 Asio, Y.J.Q., Antiquiera, E.D., & Aquino-Ruivivar, L., On a Variation of the Zero Divisor Graph and Some of Its Properties. Proceedings of the DLSU Research Congress, De La Salle University, Manila, Philippines, 2017.  
Rosa-Reynera, M.D., & Aquino-Ruivivar, L., Optimal Zero Ring Labeling Scheme for Trees. *Matimyás Matematika*. Journal of the Mathematical Society of the Philippines, 2017, 40(1):31-39.
- 2016 Alcantara, J.H., Lao, A.R., & Ruivivar, L.A., Stability Analysis of the ODE Model Representation of Amyloidogenic Processing in Alzheimer's Disease in the Presence of SORLA. *Molecular BioSystems*, 2016, 12(5):1468-1477.  
Castañeda, A.T.S., Medina, M.A.S., & Aquino-Ruivivar, L., Notions of Domination for Some Classes of Graphs. Proceedings of the DLSU Research Congress, De La Salle University, Manila, Philippines, 2016.
- 2015 Aquino-Ruivivar, L., Domination, Independence and Other Numbers Associated With the Intersection Graph of a Set of Half-planes. Proceedings of the DLSU Research Congress, De La Salle University, Manila, Philippines, 2015.
- 2014 Destacamento, C.J., Rodriguez, A.D., & Aquino-Ruivivar, L., The Game Chromatic Number of Some Classes of Graphs. Proceedings of the DLSU Research Congress, De La Salle University, Manila, Philippines, 2014.
- 2008 Gervacio, S.V., Lim, Y.F., & Ruivivar, L.A., Solvable Trees. In: Ito, H., Kano, M., Katoh, N., Uno, Y. (Eds) *Computational Geometry and Graph Theory*. KyotoCGGT 2007. *Lecture Notes in Computer Science*, 2008, 4535.  
Aquino-Ruivivar, L., Singular and nonsingular circulant graphs. *Journal of Research in Science, Computing and Engineering*, 2008, 3(3):8-11.
- 2006 Gervacio, S.V., & Aquino-Ruivivar, L., An Integral Planar Embedding of Graphs. *Journal of Research In Science, Computing And Engineering*, 2006, 3(2).
- 2000 Gervacio, S.V., & Aquino-Ruivivar, L., Construction of  $r$ -regular singular graphs. *Indian Journal of Pure and Applied Mathematics*, 2000, 31(5):499-504.
- 1999 Aquino-Ruivivar, L., Bounded Mean Oscillation on Regular Riemann Surfaces. *The Manila Journal of Science*, 1999, 2(2):1-5.
- 1998 Aquino-Ruivivar, L., Harmonic Functions of Bounded Mean Oscillation and a Class of Ba Spaces. *The Manila Journal of Science*, 1998, 1(1):15-24.

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**Sex** Male

**Education**

Master of Science in Materials Science and Engineering, University of the Philippines, Diliman, Quezon City

Bachelor of Science in Physics, University of the Philippines, Diliman, Quezon City

Secondary level, Malabon National High School, Hulong-Duhat, Malabon City

**Fields of Specialization**

Device Physics and Materials Science

Device Fabrication and Characterization

Semiconductors (GaAs, Si, Metal-oxide semiconductors)

Product Engineering and Failure Analysis

**Employment**

Product Engineering Supervisor (Yield Enhancement), Maxim Integrated, 2018 March-Present

Senior Product Engineer (Yield Enhancement), Maxim Integrated, 2016 September-Present

Product Engineer, Maxim Integrated, 2012

Science Research Specialist I, National Institute of Physics, University of the Philippines, 2008 June-2012 June

**Association Membership**

Member, ASM International

**Honors / Awards**

3<sup>rd</sup> Place at the 6<sup>th</sup> AFO Innovation Summit, Maxim Integrated, Cavite 2014 November

Maxim Inspire Awardee, Maxim Integrated, Thailand 2014 October

Q4 2013 Employee of the Quarter , Maxim Integrated, Cavite 2013 November

Above and Beyond Awardee, Maxim Integrated, Cavite 2013 August

College Scholar - Second Semester AY 2005-2006, University of the Philippines Diliman 2006 March

**Researches**

**Completed**

A Novel Anti-Reflection Coating (ARC) Solution for Backside Analysis and Backside Photoemission Microscopy

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### Papers Presented

- 2016 November 6-10 Awitan, F.C., Garcia, C.J., Doyle, D.A., & Benedict, L. (2016 November 6-10). A Study on a Low Cost Thin Film Antireflection Coating (ARC) Solution for Failure Analysis Applications, 42<sup>nd</sup> International Symposium for Testing and Failure Analysis, Forth Worth, Texas, U.S.A.
- 2016 November 6-10 Doyle, D., Benedict, L., & Awitan, F.C. (2016 November 6-10). Physical Failure Analysis (PFA) Techniques For Front-End-of-Line (FEOL) Defect Analysis, 42<sup>nd</sup> International Symposium for Testing and Failure Analysis, Forth Worth, Texas, U.S.A.
- 2012 October Payod, R., Yu, C., Vasquez, D.J., Ragasa, J.C.R., Tumanguil, M.A., Cabello, N., Awitan, F.C., Somintac, A., & Salvador, A. (2012 October). Fabrication and Characterization of Indium Oxide Heterojunction Photodiodes on p-Silicon(111), 30<sup>th</sup> Samahan ng Pisika ng Pilipinas, De La Salle Health Science Institute, Manila.
- 2011 August 28 - September 1 Estacio, E.S., Que, C.T., Awitan, F.C.B., Bugante, J.I., de Vera, F.I., Azares, J., Afalla, J., de Vero, J., Somintac, A.S., Sarmago, R.V., Salvador, A.A., Yamamoto, K., & Tani, M. (2011 August 28 - September 1). Terahertz emission from indium oxide films on MgO substrates excited at a photon energy below the bandgap, 2011 International Quantum Electronics Conference, Sydney, NSW, Australia.
- 2011 June 26 - July 1 Balgos, M.H., Defensor, M., Jaculbia, R.B., Ibanez, J.J., Loberternos, R.A., Awitan, F.C., Tumanguil, M.A., Simon, R.C., & Salvador, A. (2011 June 26 - July 1). Time-resolved Photoluminescence Spectroscopy of Core-shell Gaas/algaas Nanowires Grown on Si(100) and Si(111) Substrates, ICMAT 2011, Suntec, Singapore.
- 2010 October Payod, R., Crosby, S., Tabacon, D., Vasquez, D.A., Awitan, F., Jaculbia, R.B., Defensor, M., Salvador, A., & Somintac, A. (2010 October). Optical and Electrical Characterization of an Interdigitated Structured Metal-Semiconductor Photodiode fabricated on n-GaAs substrate, 28<sup>th</sup> Samahan ng Pisika ng Pilipinas (SPP), MERALCO Management and Leadership Development Center (MMLDC), Antipolo City.

### Publications

- 2016 Awitan, F.C., Garcia, C.J., Doyle, D.A., & Benedict, L., A Study on a Low Cost Thin Film Anti-Reflection Coating (ARC) Solution for Failure Analysis Applications. Proceedings from the 42<sup>nd</sup> International Symposium for Testing and Failure Analysis, 2016.  
Doyle, D., Benedict, L., & Awitan, F.C., Physical Failure Analysis (PFA) Techniques for Front-End-Of-Line (FEOL) Defect Analysis. Proceedings from the 42<sup>nd</sup> International Symposium for Testing and Failure Analysis, 2016.
- 2012 Estacio, E.S., Que, C.T., Awitan, F.C.B., Bugante, J.I., de Vera, F.I., Azares, J., Afalla, J., de Vero, J., Somintac, A.S., Sarmago, R.V., Salvador, A.A., Yamamoto, K., & Tani, M., Terahertz emission from indium oxide films on MgO substrates using sub-bandgap photon energy excitation. Optics Express, 2012, 20(4):4518-4524.

- Payod, R., Yu, C., Vasquez, D.J., Ragasa, J.C.R., Tumanguil, M.A., Cabello, N., Awitan, F.C., Somintac, A., & Salvador, A., Fabrication and Characterization of Indium Oxide Heterojunction Photodiodes on p-Silicon(111). Proceedings of the 30<sup>th</sup> Samahan ng Pisika ng Pilipinas Conference, 2012.
- 2011 Balgos, M.H., Defensor, M., Jaculbia, R.B., Ibanez, J.J., Loberternos, R.A., Awitan, F.C., Tumanguil, M.A., Simon, R.C., & Salvador, A., Time-resolved Photoluminescence Spectroscopy of Core-shell Gaas/algaas Nanowires Grown on Si(100) and Si(111) Substrates. Proceedings of the International Conference on Materials for Advanced Technologies, 2011.
- Estacio, E.S., Que, C.T., Awitan, F.C.B., Bugante, J.I., de Vera, F.I., Azares, J., Afalla, J., de Vero, J., Somintac, A.S., Sarmago, R.V., Salvador, A.A., Yamamoto, K., & Tani, M., Terahertz emission from indium oxide films on MgO substrates excited at a photon energy below the bandgap. 2011 International Quantum Electronics Conference and Conference on Lasers and Electro-Optics Pacific Rim incorporating the Australasian Conference on Optics, Lasers and Spectroscopy and the Australian Conference on Optical Fibre Technology, 2011.
- 2010 Takatori, S., Minh, P.H., Estacio, E., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Bailon-Somintac, M., Somintac, A., Defensor, M., Gabayno, J., Awitan, F.C.B., Jaculbia, R.B., Garcia, A., Ponceca, C., Jr., Salvador, A., & Sarukura, N., Investigation of the terahertz emission characteristics of MBE-grown GaAs-based nanostructures. *Optical Materials*, 2010, 32(7):776-779.
- Payod, R., Crosby, S., Tabacon, D., Vasquez, D.A., Awitan, F., Jaculbia, R.B., Defensor, M., Salvador, A., & Somintac, A., Optical and Electrical Characterization of an Interdigitated Structured Metal-Semiconductor Photodiode fabricated on n-GaAs substrate. Proceedings of the 28<sup>th</sup> Samahan ng Pisika ng Pilipinas Conference, 2010.
- 2009 Estacio, E., Minh, P.H., Takatori, S., Catadal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Somintac, A., Defensor, M., Awitan, F.C.B., Jaculbia, R.B., Salvador, A., & Garcia, A., Strong enhancement of terahertz emission from GaAs in InAs/GaAs quantum dot structures. *Applied Physics Letters*, 2009, 94(23):232104.



**Name** Michelle Bailon-Somintac

**Sex** Female

**Education**

Master of Science in Physics, Applied Physics, University of the Philippines, Diliman, Quezon City 1997-1998

**Fields of Specialization**

Applied Physics

Solid State Physics

Quantum Physics

Materials Science

Condensed Matter Physics

Materials Physics

Experimental Physics

Optics

**Employment**

Staff Reliability Engineer, Lattice Semiconductor, 2012-Present

Principal Integration Engineer, SunPower Corporation, 2011 September-2011 December

Unit Manager, Hitachi Global Storage Technology Inc., 2009 August-2011 September

Failure Analysis Engineer, Intel Philippines, 2002 April-2008 December

Parametric Failure Analysis Engineer, Intel, 2002 April-2008 December

Teaching Assistant, University of the Philippines, 1997-2001

**Papers Presented**

2017 July 4-7 Bailon-Somintac, M., Ison, C., Hormigos, G., Maturan, J., Dizon, A., Dy, D., & dela Cruz, R. (2017 July 4-7). Impact of sodium-rich contaminant on wafer level chip scale package (WLCSP) devices during reliability package stress test, 2017 IEEE 24<sup>th</sup> International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA), Chengdu, China.

2017 July 4-7 de las Alas, K.A., Ison, C., Rivera, J.O., dela Cruz, R., Aguares, R., Vyas, D., Nguyem, T., & Bailon-Somintac, M. (2017 July 4-7). Temperature and humidity stress failure on copper pillar (CuP) flip chip package device, 2017 IEEE 24<sup>th</sup> International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA), Chengdu, China.

## Publications

- 2017 Bailon-Somintac, M., Ison, C., Hormigos, G., Maturan, J., Dizon, A., Dy, D., & dela Cruz, R., Impact of sodium-rich contaminant on wafer level chip scale package (WLCSP) devices during reliability package stress test. Proceedings of the 2017 IEEE 24<sup>th</sup> International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA), 2017: doi:10.1109/IPFA.2017.8060093.
- de las Alas, K.A., Ison, C., Rivera, J.O., dela Cruz, R., Aguares, R., Vyas, D., Nguyem, T., & Bailon-Somintac, M., Temperature and humidity stress failure on copper pillar (CuP) flip chip package device. Proceedings of the 2017 IEEE 24<sup>th</sup> International Symposium on the Physical and Failure Analysis of Integrated Circuits (IPFA), 2017.
- 2015 Delos Santos, R., Ibañes, J.J., Balgos, M.H., Jaculbia, R., Afalla, J.P., Bailon-Somintac, M., Estacio, E., Salvador, A., Somintac, A., Que, C., Tsuzuki, S., Yamamoto, K., & Tani, M., Dynamics of Optically-Generated Carriers in Si (100) and Si (111) Substrate-Grown GaAs/AlGaAs Core-Shell Nanowires. *Nanoscale Research Letters*, 2015, 10(1):1050.
- 2014 Balgos, M.H., Jaculbia, R., Defensor, M., Afalla, J.P., Ibañes, J.J., Bailon-Somintac, M., Estacio, E., Salvador, A., & Somintac, A., Shell to core carrier-transfer in MBE-grown GaAs/AlGaAs core-shell nanowires on Si(1 0 0) substrates. *Journal of Luminescence*, 2014, 155:27-31.
- 2013 Afalla, J., de las Alas, K.A., Balgos, M.H., Bailon-Somintac, M.F., & Salvador, A., Deep level traps and the temperature behavior of the photoluminescence in GaAs/AlGaAs multiple quantum wells grown on off-axis and on-axis substrates. *Journal of Luminescence*, 2013, 143:517-520.
- 2011 Bailon-Somintac, M.F., Ibanez, J.J., Jaculbia, R.B., Loberternos, R.A., Defensor, M.J., Salvador, A.A., & Somintac, A.S., Low temperature photoluminescence and Raman phonon modes of Au-catalyzed MBE-grown GaAs-AlGaAs core-shell nanowires grown on a pre-patterned Si (111) substrate. *Journal of Crystal Growth*, 2011, 314:268-273.
- 2010 Takatori, S., Minh, P.H., Estacio, E., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Bailon-Somintac, M., Somintac, A., Defensor, M., Gabayno, J., Awitan, F.C.B., Jaculbia, R.B., Garcia, A., Ponseca, C., Jr., Salvador, A., & Sarukura, N., Investigation of the terahertz emission characteristics of MBE-grown GaAs-based nanostructures. *Optical Materials*, 2010, 32(7):776-779.
- 2008 Estacio, E., Sarukura, N., Ponseca, C., Jr., Somintac, A., Bailon-Somintac, M., Garcia, A., & Salvador, A., Transverse magnetic field polarity effects on the terahertz radiation from GaAs/AlGaAs modulation-doped heterostructures with varying AlGaAs spacer-layer thickness. *Journal of Applied Physics*, 2008, 104(7):073506.
- delos Santos, R.M., Ibañes, J.J.A., Fernando, J.G., Jaculbia, R.B., Presto, J.M.M., Defensor, M.J., Somintac, M.B., Concepcion, P., Salvador, A.A., & Somintac, A., Growth of Gold-assisted Gallium Arsenide Nanowires on Silicon Substrates via Molecular Beam Epitaxy. *Science Diliman*, 2008, 20(1):31-38.

**Name** Charina Gracia B. Banaay

**Sex** Female

**Fields of Specialization**

Microbial Ecology

Microbiology

Molecular Biology

Botany

Plant Ecology

**Papers Presented**

- 2016 June 13-17 Abris, M.I., Palanca, M.G., De Leon, M.P., & Banaay, C.G.B. (2016 June 13-17). Microbial indicators of air and water quality in a tropical cave, 23<sup>rd</sup> International Conference on Subterranean Biology, Fayetteville, Arkansas, U.S.A.
- 2014 February Lambio, I.A., Banaay, C.G., Maranan, F., & Rabena, M.A. (2014 February). Effect of Varying Light Intensities on Phenotypic Expression on Selected Plant Species, 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, Manila.
- 2014 February Lambio, I.A.F., Barrion-Dupo, A.L.A., Fajardo, A.M., Banaay, C.G.B., Maranan, F.S., Beringuela, R.T., Campang, J.G., Rabena, M.A.F., & Encinares, J.M.A. (2014 February). Eco-minutes to win it game: Integrating Ecological Concepts in a Competitive Classroom Activity, 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, Manila.
- 2013 March 14 Barrion-Dupo, A.L.A., Lambio, I.A.F., Maranan, F.S., Banaay, C.G.B., Beringuela, R.T., & Fajardo, A.M. (2013 March 14). Footing the Bill: The Carbon Footprint Game, 48<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, Manila.
- 2013 March Barrion-Dupo, A.L.A., Lambio, I.A.F., Maranan, F.S., Banaay, C.G.B., Beringuela, R.T., & Fajardo, A.M. (2013 March). Biodiversity Boardgame: A Tool for Teaching Environmental Biology, 48<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, Manila.
- 2013 March Barrion-Dupo, A.L.A., Fajardo, A.M., Banaay, C.G., Beringuela, R.T., Lambio, I.A.F., & Maranan, F.S. (2013 March). Innovative Ways of Teaching Environmental Biology, 48<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, Manila.
- 2009 November 16-18 Banaay, C.G.B., Fernandez, L.C., Pinili, M.S., Das, K., Zule, Z., Kumar, A., De Waele, D., Vera Cruz, C.M. (2009 November 16-18). Evaluation of response of selected aerobic and upland rice varieties to simultaneous inoculation with *Pythium arrhenomanes* and *Meloidogyne graminicola*, 6<sup>th</sup> International Rice Genetic Symposium, Manila, Philippines.

- 2002 May 9-11 Banaay, C.G.B., & Dalmacio, I.F. (2002 May 9-11). Initial survey of bacteriocin-producing lactic acid bacteria from selected indigenous fermented foods, Philippine Society for Microbiology, Inc.(PSM) Annual Convention, Tagaytay City .

## Publications

- 2016 Verbeek, R.E.M., Banaay, C.G.B, Sikder, M., De Waele, D., Vera Cruz, C.M., Gheysen, G., Höfte, M., & Kyndt, T., Interactions between the oomycete *Pythium arrhenomanes* and the rice root-knot nematode *Meloidogyne graminicola* in aerobic Asian rice varieties. *Rice*, 2016, 9(1):36.
- Mendoza, B.C., Elegado, F.B., Colegio, S.M.T., Lim, V.M.T., Gervasio, A.T.R., Perez, M.T.M., Balolong, M.P., & Banaay, C.G.B., Ethnic fermented foods of the Philippines with reference to lactic acid bacteria and yeasts. *Ethnic Fermented Foods and Alcoholic Beverages of Asia*, 2016, 1:323-340.
- Banaay, C.G.B., Kreye, C., Höfte, M., Kumar, A., De Waele, D., Cuevas, V.C., Vera Cruz, C.M., & Bouman, B.A.M., Paper 17 Alleviating soil sickness in tropical aerobic rice: a role for abiotic and biotic interactions. In: Technical Assistance Consultant's Report, Regional: Development and Dissemination of Climate-Resilient Rice Varieties for Water-Short Areas of South Asia and Southeast Asia (Financed by the Climate Change Fund and the Government of Finland), 2016:401-419.
- 2015 Jatulan, E.O., Rabajante, J.F., Banaay, C.G.B., Fajardo, A.C., Jr., & Jose, E.C., A mathematical model of intra-colony spread of American foulbrood in European honeybees (*Apis mellifera* L.). *PloS one*, 2015, 10(12):e0143805.
- 2013 Banaay, C.G.B., Balolong, M.P., & Elegado, F.B., Lactic acid bacteria in Philippine traditional fermented foods. In: *Lactic Acid Bacteria-R & D for Food, Health and Livestock Purposes*, by InTech, 2013: doi:10.5772/50582.
- Banaay, C.G.B., Vera Cruz, C.M., & Cuevas, V.C., Effect of organic matter amendment on the rhizosphere microbial community and root-infecting pathogens of aerobic rice variety Apo. *Philippine Science Letters*, 2013, 6(1):107-118.
- Galan, C.M.U., Gamiao, L.D.D., Banaay, C.G.B., Balolong, M.P., Dalmacio, L.M.M., & Hallare, A.V., Comparison of the Fungal Profile of the Aquaculture and Non-Aquaculture Water in Taal Lake, Batangas, Philippines through PCR-DGGE of the 18S rRNA Gene. *Journal of Nature Studies*, 2013, 12(2):18-30.
- 2012 Banaay, C.G.B., Cuevas, V.C., & Vera Cruz, C.M., *Trichoderma ghanense* promotes plant growth and controls disease caused by *Pythium arrhenomanes* in seedlings of aerobic rice variety apo. *Philippine Agricultural Scientist*, 2012, 95(2):175-184.
- Buyten, E.V., Banaay, C.G.B., Vera Cruz, C., & Höfte, M., Identity and variability of *Pythium* species associated with yield decline in aerobic rice cultivation in the Philippines. *Plant Pathology*, 2012, 62(1):139-153.
- 2009 Penili, M., Banaay, C.G., Elazegui, F., Steelandt, A., Das, K., Kreye, C., Kumar, A., Bouman, B., Hoffe, M., & Vera Cruz, C.M., Population dynamics of *Pythium* sp. and *Meloidogyne graminicola* from an aerobic rice field planted to variety APO. *Philippine Journal of Crop Science*, 2009, 34(supp1):75.

- 2008 Magcale-Macandog, D.B., Barrion-Dupo, A.L., Gruezo, W.SM., Paller, V.G., Edrial, J., Banaay, C.G.B., Dionisio-Sese, M., & Mendioro, M., Eliciting factors affecting fish kill events in Taal Lake through participatory approaches: A tool for the development of a predictive fish kill model. *Asia Life Sciences*, 2008, 3:1-52.
- 2007 Tan, J.D., Banaay, C.G.B., Parungao, M.M., & Cantera, M.A.R.G., Microorganisms associated with Agos-os [fermented sweet potato and meat mixture]. *Philippine Agricultural Scientist*, 2007, 90(3):257-262.
- 2004 Banaay, C.G.B., Elegado, F.B., & Dalmacio, I.F., Identification and characterization of bacteriocinogenic *Lactobacillus plantarum* BS25 isolated from balao-balao, a locally fermented rice-shrimp mixture from the Philippines. *Philippine Agricultural Scientist*, 2004, 87(4):427-438.
- 2003 Elegado, F.B., Opina, A.C.L., Banaay, C.G.B., & Dalmacio, I.F., Purification and characterization of novel bacteriocins from lactic acid bacteria isolated from Philippine fermented rice-shrimp of rice-fish mixtures. *Philippine Agricultural Scientist*, 2003, 86(1):65-74.
- 2002 Monsalud, R.G., Magbanua, F.O., Parungao, M.P., Banaay, C.G.B., Bayer, M.H.D., Yap, J.K., & Tapay, L.M., The Philippine National Collection of Microorganisms (PNCM): Repository of microbial diversity of the country. *Journal of Ocean University of Qingdao*, 2002, 1(1):101-104.

**Name** Marilou Cadatal-Raduban

**Sex** Female

**Education**

Doctor of Philosophy in Laser Physics, SOKENDAI (The Graduate University for Advanced Studies), Shonan Village, Hayama, Kanagawa 240-0193 Japan 2008

Master of Science in Physics, Optics and Photonics, University of the Philippines, Diliman, Quezon City 2004

Bachelor of Science in Applied Physics, Optics and Photonics, University of the Philippines, Diliman, Quezon City 2002

**Fields of Specialization**

Material Science

Solid State Physics

Experimental Physics

Ultraviolet and Vacuum Ultraviolet Lasers

Ultraviolet and Vacuum Ultraviolet Spectroscopy

Rare Earth Doped Fluoride Materials

Optics

Photonics

Laser

Applied Physics

**Employment**

Faculty Member, Institute of Natural and Mathematical Sciences, Massey University, 2012 January-Present

Postdoctoral Researcher, Institute of Laser Engineering, Osaka University, 2009 April-2011 December

Postdoctoral Fellow, Japan Society for the Promotion of Science, 2008 September-2009 March

Doctoral student, Japan Society for the Promotion of Science, 2006 October-2008 September

Research Assistant, Institute for Molecular Science, Okazaki, Japan, 2005 November-2006 September

Instructor VII, National Institute of Physics, University of the Philippines, 2004 November-2005 October

Instructor I, National Institute of Physics, University of the Philippines, 2003 June-2004 October

Teaching Associate, National Institute of Physics, University of the Philippines, 2002 June-2003 May

### Association Membership

Member, Phi Kappa Phi

Member, Samahang Pisika ng Pilipinas (Physics Society in the Philippines)

Member, Photonics Research Laboratory

Associate Member, National Research Council of the Philippines

### Honors / Awards

DOST Scholar, Science Education Institute, Department of Science and Technology 1997-2002

### Papers Presented

- 2017 June 25-29 Cadatal-Raduban, M., Minami, Y., Arita, R., Pham, M.H., Empizo, M.J.F., Luong, M.V., Tori, T., Takabatake, M., Fukuda, K., Mori, K., Yamanoi, K., Shimizu, T., Sarukura, N., Fukuda K., Kawaguchi, N., Yokota, Y., & Yoshikawa, A. (2017 June 25-29). Optical Characterization of Nd<sup>3+</sup>:LiCaAlF<sub>6</sub> in the Vacuum Ultraviolet Region at Low Temperature, The European Conference on Lasers and Electro-Optics.
- 2012 November 15-16 Nakazato, T., Shimizu, T., Yamanoi, K., Sakai, K., Takeda, K., Nishi, R., Minami, Y., Sogi, R., Shinzato, Y., Arita, R., Hori, T., Cadatal-Raduban, M., Sarukura, N., Kano, M., Wakamiya, A., Fukuda, T., Tanaka, M., Nishikino, M., & Kawachi, T. (2012 November 15-16). Spatial resolution measurement of ZnO crystal as a soft x-ray scintillator, 13<sup>th</sup> symposium on advanced photon research, Kansai Photon Science Institute, Japan Atomic Energy Agency (JAEA-KPSI), Kizugawa-shi, Kyoto.
- 2011 September 4-9 Shinzato, Y., Yamanoi, K., Nishi, R., Takeda, K., Nakazato, T., Shimizu, T., Sarukura, N., Cadatal-Raduban, M., Fukuda, K., Kurosawa, S., Yokota, Y., Yoshikawa, A., Togashi, T., Nagazno, M., & Ishikawa, T. (2011 September 4-9). Vacuum Ultraviolet Fluorescence Spectroscopy of Nd<sup>3+</sup>:LaF<sub>3</sub> Using Femtosecond Extreme Ultraviolet Free Electron Laser, Particle accelerator. 2<sup>nd</sup> International Conference, IPAC 2011, San Sebastian, Spain.
- 2010 May 16-21 Takahashi, M., Osada, A., Dergachev, A., Moulton, P.F., Cadatal-Raduban, M., Shimizu, T., & Sarukura, N. (2010 May 16-21). Reduction of thermal dephasing by tight elliptical focusing perpendicular to walk-off plane leading to improved fourth harmonic generation in  $\beta$ -BaB<sub>2</sub>O<sub>4</sub>, CLEO/QELS: 2010 Laser Science to Photonic Applications, San Jose, CA, U.S.A.
- 2009 September 21-25 Estacio, E., Pham, M.H., Takatori, S., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Somintac, A., Defensor, M., Garcia, A., Salvador, A., (2009 September 21-25). Enhanced terahertz emission from GaAs in MBE-grown InAs/GaAs quantum dot structures, 34<sup>th</sup> International Conference on Infrared, Millimeter, and Terahertz Waves.
- 2009 June 2-4 Shimizu, T., Cadatal, M., Yamanoi, K., Takatori, S., Pham, M., Estacio, E., Nakazato, T., Sarukura, N., Fukuda, K., Suyama, T., Yanagida, T., Yoshikawa, A., & Saito, F. (2009 June 2-4). Er:LiCAF as potential vacuum ultraviolet laser

material at 163 nm, 2009 Conference on Lasers and Electro-Optics and 2009 Conference on Quantum electronics and Laser Science Conference, Baltimore, MD., U.S.A.

- 2009 May 31 - June 5 Nakazato, T., Shimizu, T., Yamanoi, K., Takatori, S., Estacio, E., Cadatal, M.M., Sarukura, N., Nishimura, H., Mima, K., Tanaka, M., Nishikino, M., Ochi, Y., Ohba, T., Kaihori, T., Kawachi, T., Kagamitani, Y., Ehrentraut, D., & Fukuda, T. (2009 May 31 - June 5). Single-Shot Focal Spot Image of EUV Laser Using a ZnO Scintillator, Conference on Lasers and Electro-Optics, Baltimore, Maryland United States.
- 2009 May 31 - June 5 Furukawa, Y., Nakazato, T., Shimizu, T., Cadatal, M., Estacio, E., Sarukura, N., Shiroshita, A., Otani, K., Kadono, T., Shigemori, K., & Azechi, H. (2009 May 31 - June 5). Three-Photon Lasing from ZnSe Excited by a Kilojoule-Class Nd:Glass Laser, Conference on Lasers and Electro-Optics, Baltimore, Maryland United States.
- 2009 May 31 - June 5 Cadatal, M.M., Furukawa, Y., Yamanoi, K., Takatori, S., Pham, M., Estacio, E., Nakazato, T., Shimizu, T., Sarukura, N., Kitano, K., Ando, K., Uchiyama, K., Isobe, Y., Fukuda, K. Suyama, T., Yanagida, T., Yoshikawa, A., & Saito, F. (2009 May 31 - June 5). Development of Vacuum Ultraviolet Streak Camera System with Bright Spectrograph for the Evaluation of Luminescent Materials, Conference on Lasers and Electro-Optics, Baltimore, Maryland United States.
- 2008 May 4-9 Estacio, E.S., Saito, S., Nakazato, T., Furukawa, Y., Tatsumi, T., Pham, M.H., Cadatal, M., Ponceca, C., Jr., Mizuseki, H., Kawazoe, Y., & Sarukura, N. (2008 May 4-9). Terahertz Birefringence of  $\beta$ -BaB<sub>2</sub>O<sub>4</sub> (BBO) Crystal, 2008 Conference on Lasers and Electro-Optics and 2008 Conference on Quantum Electronics and Laser Science.
- 2007 Cadatal, M., Seo, Y., Tatsumi, T., Pham, M., Ponceca, C., Jr., Ono, S., Estacio, E., Furukawa, Y., Murakami, H., Fujimoto, Y., Sarukura, N., Nakatsuka, M., Fukuda, K., Simura, R., Suyama, T., Yoshikawa, A., & Fukuda, T. (2007). Nd<sup>3+</sup>:(La<sub>1-x</sub>Ba<sub>x</sub>)F<sub>3-x</sub> Grown via Micro-PD as New Vacuum Ultraviolet Scintillator and Potential Laser Material, Conference on Lasers and Electro-Optics/Pacific Rim 2007.
- 2007 Ponceca, C., Estacio, E., Cadatal, M., Pobre, R., Quiroga, R., Murakami, H., Ono, S., Sarukura, N., Nishikawa, J., Suto, K. Sasaki, T., Tanno, T., & Tominaga, K. (2007). Numerical calculations of the Frequency Spectra of naphthalene and 1, 4-dihydroxynaphthalene in the 0.5-to 6 terahertz region, 2007 Conference on Lasers and Electro-Optics - Pacific Rim.
- 2007 May 6-11 Ponceca, C., Cadatal, M., Pobre, R., Quiroga, R., Murakami, H., Ono, S., Sarukura, N., Nishikawa, J., Suto, K., Sasaki, T., Tanno, T., & Tominaga, K. (2007 May 6-11). Accurate modeling of inter-and intra-molecular interactions in 1, 4-dihydroxynaphthalene in the 0.5-6 terahertz region, 2007 Conference on Lasers and Electro-Optics (CLEO).
- 2007 May 6-11 Cadatal, M.M., Seo, Y., Tatsumi, T., Pham, M., Ponceca, C., Jr., Ono, S., Estacio, E., Furukawa, Y., Murakami, H., Fujimoto, Y., Sarukura, N., Nakatsuka, M., Fukuda, K., Simura, R., Suyama, T., Yoshikawa, A., & Fukuda, T. (2007 May 6-11). Nd<sup>3+</sup>: (La<sub>1-x</sub>Ba<sub>x</sub>)<sub>3-x</sub> as Vacuum Ultraviolet Scintillator and New Laser



Material, Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies.

2006  
September  
18-22 Ponceca, C.S., Quema, A.V., de los Reyes, G., Estacio, E., Cadatal, M.M., Pobre, R., Quiroga, R., Murakami, H., Ono, S., Sarukura, N., Tanno, T., Sasaki, T., Suto, K., Nishikawa, J., & Tominaga, K. (2006 September 18-22). Terahertz transmission spectroscopic analysis of mono-and di-substituted hydroxynaphthalenes in the 0.5-to 6-THz region using GaP THz wave generator, 2006 Joint 31<sup>st</sup> International Conference on Infrared Millimeter Waves and 14<sup>th</sup> International Conference on Terahertz Electronics.

2006  
September  
18-22 Ponceca, C.S., Quema, A.V., Estacio, E., Cadatal, M.M., Murakami, M., Ono, S., Sarukura, N., Argyros, A., Large, M.C.J., & van Eijkelenborg, M.A. (2006 September 18-22). Terahertz-time domain spectroscopy of microstructured poly (methylmetacrylate) polymer fiber, 2006 Joint 31<sup>st</sup> International Conference on Infrared Millimeter Waves and 14<sup>th</sup> International Conference on Terahertz Electronics.

## Publications

2018 Cadatal-Raduban, M., Pham, M.H., Gabayno, J.L., Yamanoi, K., Empizo, J.F., Shimizu, T., Sarukura, N., Nguyen, H.D., Yoshikawa, A., & Fukuda, T., Optimized Ce:LiCAF amplifier pumping configurations. *Solid State Lasers XXVII: Technology and Devices*, Clarkson, W.A., & Shori, R.K., Eds., Proceedings of SPIE Vol. 10511, 2018.

Yamanoi, K., Hori, T., Minami, Y., Empizo, M.J.F., Luong, M.V., Shiro, A., Watanabe, J., Iwano, K., Iwasa, Y., Cadatal-Raduban, M., Gabayno, J.L., Shimizu, T., Sarukura, N., Norimatsu, T., Investigation of holmium-doped zirconium oxide ceramic phosphor as an ultraviolet wavelength-discriminating laser beam viewer. *Optical Materials*, 2018, 75:347-349.

Pham, M.H., Cadatal-Raduban, M., Pham, D.V., Nguyen, T.X., Luong, M.V., Yamanoi, K., Shimizu, T., Sarukura, N., & Nguyen, H.D., Tunable narrow linewidth picosecond pulses from a single grating gain-switched Ce:LiCAF laser. *Laser Physics*, 2018, 28(8):085802.

Empizo, M.J.F., Cadatal-Raduban, M., Murata, T., Minami, Y., Kawano, K., Yamanoi, K., Shimizu, T., Sarukura, N., Guzik, M., Guyot, Y., & Boulon, G., Spectroscopic properties of Pr<sup>3+</sup>-doped 20Al(PO<sub>3</sub>)<sub>3</sub>-80LiF glasses as potential scintillators for neutron detection. *Journal of Luminescence*, 2018, 193:13-21.

Cadatal-Raduban, M., Pham, M.H., Pham, D.V., Bui, D.T.T., Yamanoi, K., Takeda, K., Empizo, M.J.F., Mui, L.V., Shimizu, T., Nguyen, H.D., Sarukura, N., & Fukuda, T., Total internal reflection-based side-pumping configuration for terawatt ultraviolet amplifier and laser oscillator development. *Applied Physics B*, 2018, 124(6):125.

2017 Cadatal-Raduban, M., Minami, Y., Arita, R., Pham, M.H., Empizo, M.J.F., Luong, M.V., Tori, T., Takabatake, M., Fukuda, K., Mori, K., Yamanoi, K., Shimizu, T., Sarukura, N., Fukuda, K., Kawaguchi, N., Yokota, Y., & Yoshikawa, A., Optical characterization of Nd<sup>3+</sup>:LiCaAlF<sub>6</sub> in the vacuum ultraviolet region at low temperature. *Proceedings of the 2017 European Conference on Lasers and Electro-Optics and European Quantum Electronics Conference*, (Optical Society of America, 2017), paper CE\_P\_1, 2017.

Luong, M.V., Empizo, M.J.F., Cadatal-Raduban, M., Arita, R., Minami, Y.,

- Shimizu, T., Sarukura, N., Azechi, H., Pham, M.H., Nguyen, H.D., Kawazoe, Y., Steenbergen, K.G., & Schwerdtfeger, P., First-principles calculations of electronic and optical properties of LiCaAlF<sub>6</sub> and LiSrAlF<sub>6</sub> crystals as VUV to UV solid-state laser materials. *Optical Materials*, 2017, 65:15-20.
- Shimizu, T., Luong, M.V., Cadatal-Raduban, M., Empizo, M.J.F., Yamanoi, K., Arita, R., Minami, Y., Sarukura, N., Mitsuo, N., Azechi, H., Pham, M.H., Nguyen, H.D., Ichiyanagi, K., Nozawa, S., Fukaya, R., Adachi, S., Nakamura, K.G., Fukuda, K., Kawazoe, Y., Steenbergen, K.G., & Schwerdtfeger, P., High pressure band gap modification of LiCaAlF<sub>6</sub>. *Applied Physics Letters*, 2017, 110(14):141902.
- 2016 Minami, Y., Arita, R., Cadatal-Raduban, M., Pham, M.H., Empizo, M.J.F., Luong, M.V., Hori, T., Takabatake, M., Fukuda, K., Mori, K., Yamanoi, K., Shimizu, T., Sarukura, N., Fukuda, K., Kawaguchi, N., Yokota, Y., & Yoshikawa, A., Temperature-dependent evaluation of Nd:LiCAF optical properties as potential vacuum ultraviolet laser material. *Optical Materials*, 2016, 56:5-8.
- 2015 Luong, M.V., Cadatal-Raduban, M., Empizo, M.J.F., Arita, R., Minami, Y., Shimizu, T., Sarukura, N., Azechi, H., Pham, M.H., Nguyen, H.D., & Kawazoe, Y., Comparison of the electronic band structures of LiCaAlF<sub>6</sub> and LiSrAlF<sub>6</sub> ultraviolet laser host media from ab initio calculations. *Japanese Journal of Applied Physics*, 2015, 54(12):122602.
- Arita, R., Minami, Y., Cadatal-Raduban, M., Pham, M.H., Empizo, M.J.F., Luong, M.V., Hori, T., Takabatake, M., Fukuda, K., Mori, K., Yamanoi, K., Shimizu, T., Sarukura, N., Fukuda, K., Kawaguchi, N., Yokota, Y., & Yoshikawa, A., Significant blue-shift in photoluminescence excitation spectra of Nd<sup>3+</sup>:LaF<sub>3</sub> potential laser medium at low-temperature. *Optical Materials*, 2015, 47:462-464.
- 2014 Shimizu, T., Yamanoi, K., Arita, R., Hori, T., Fukuda, K., Minami, Y., Cadatal-Raduban, M., Sarukura, N., Fukuda, T., Nagasono, M., & Ishikawa, T., Optical property of Ce<sup>3+</sup>-doped lutetium lithium fluoride for the short-wavelength device application. *Optical Materials*, 2014, 36(12):1963-1965.
- Yamanoi, K., Nishi, R., Takeda, K., Shinzato, Y., Tsuboi, M., Luong, M.V., Nakazato, T., Shimizu, T., Nobuhiko, S., Cadatal-Raduban, M., Pham, M.H., Nguyen, H.D., Kurosawa, S., Yokota, Y., Yoshikawa, A., Togashi, T., Nagasono, M., & Ishikawa, T., Perovskite fluoride crystals as light emitting materials in vacuum ultraviolet region. *Optical Materials*, 2014, 36(4):769-772.
- Pham, M.H., Cadatal-Raduban, M., Luong, M.V., Le, H.H., Yamanoi, K., Nakazato, T., Shimizu, T., Sarukura, N., & Nguyen, H.D., Numerical simulation of ultraviolet picosecond Ce:LiCAF laser emission by optimized resonator transients. *Japanese Journal of Applied Physics*, 2014, 53(6):062701.
- Nakazato, T., Hori, T., Shimizu, T., Yamanoi, K., Sakai, K., Takeda, K., Nishi, R., Minami, Y., Cadatal-Raduban, M., Sarukura, N., Nishimura, H., Azechi, H., Fukuda, T., Tanaka, M., Nishikino, M., & Kawachi, T., Spatial Resolution Evaluation of ZnO Scintillator as an In-situ Imaging Device in EUV Region. *IEEE Transactions on Nuclear Science*, 2014, 61(1):462-466.
- 2013 Shinzato, Y., Yamanoi, K., Nishi, R., Takeda, K., Nakazato, T., Shimizu, T., Sarukura, N., Cadatal-Raduban, M., Fukuda, K., Kurosawa, S., Yokota, Y., Yoshikawa, A., Togashi, T., Nagasono, M., & Ishikawa, T., Vacuum

Ultraviolet Fluorescence Spectroscopy of Nd<sup>3+</sup>:LaF<sub>3</sub> Using Femtosecond Extreme Ultraviolet Free Electron Laser. *Applied Physics Express*, 2013, 6(2):022401.

Nakazato, T., Shimizu, T., Yamanoi, K., Sakai, K., Takeda, K., Nishi, R., Minami, Y., Sogi, R., Shinzato, Y., Arita, R., Hori, T., Cadatal-Raduban, M., Sarukura, N., Kano, M., Wakamiya, A., Fukuda, T., Tanaka, M., Nishikino, M., & Kawachi, T., Spatial resolution measurement of ZnO crystal as a soft x-ray scintillator. *Proceedings of the 13<sup>th</sup> symposium on advanced photon research*, 2013.

Nagai, T., Arikawa, Y., Hosoda, H., Ioka, Y., Hasegawa, A., Wada, K., Takaoku, S., Takata, M., Noritake, K., Minami, Y., Watanabe, K., Yamanoi, K., Nakamura, H., Watari, T., Cadatal-Raduban, M., Shimizu, T., Sarukura, N., Nakai, M., Norimatsu, T., & Azechi, H., Development of time-of-flight neutron detector with fast-decay and low-afterglow scintillator for fast ignition experiment. *European Physical Journal Web of Conferences*, 2013, 59:13012.

Yamanoi, K., Shimizu, T., Cadatal-Raduban, M., Nishi, R., Takeda, K., Shinzato, Y., Nakazato, T., Sarukura, N., Fukuda, T., Nagasono, M., Togashi, T., Satoh, T., & Ishikawa, T., Time-Resolved Pump and Probe Experiment for Wide-Gap Semiconductors Using Free Electron Laser and Synchronously-Operated Femtosecond Laser. *Japanese Journal of Applied Physics*, 2013, 52(4R):040203.

Arikawa, Y., Hosoda, H., Nagai, T., Watanabe, K., Yamanoi, K., Cadatal-Raduban, M., Shimizu, T., Sarukura, N., Nakai, M., Norimatsu, T., Azechi, H., Izumi, N., Murata, T., Suyama, T., Yoshikawa, A., Kamada, K., Usuki, Y., Satoh, N., & Han, H., Multichannel down-scattered neutron detector for areal density measurement. *European Physical Journal Web of Conferences*, 2013, 59:13011.

Tsuboi, M., Takeda, K., Nakazato, T., Kono, M., Yamanoi, K., Cadatal-Raduban, M., Sakai, K., Nishi, R., Minami, Y., Luong, M.V., Arikawa, Y., Shimizu, T., Sarukura, N., Norimatsu, T., Nakai, M., Azechi, H., Murata, T., Fujino, S., Yoshida, H., Yoshikawa, A., Sato, N., Kan, H., & Kamata, K., Electronic States of Trivalent Praseodymium Ion Doped in 20Al(PO<sub>3</sub>)<sub>3</sub>-80LiF Glass. *Japanese Journal of Applied Physics*, 2013, 52(6R):062402.

Watanabe, K., Arikawa, Y., Yamanoi, K., Cadatal-Raduban, M., Nagai, T., Kouno, M., Sakai, K., Nakazato, T., Shimizu, T., Sarukura, N., Nakai, M., Norimatsu, T., Azechi, H., Yoshikawa, A., Murata, T., Fujino, S., Yoshida, H., Izumi, N., Satoh, N., & Kan, H., Pr or Ce-doped, fast-response and low-afterglow cross-section-enhanced scintillator with <sup>6</sup>Li for down-scattered neutron originated from laser fusion. *Journal of Crystal Growth*, 2013, 362:288-290.

Ieda, M., Ishimaru, T., Ono, S., Yamanoi, K., Cadatal-Raduban, M., Shimizu, T., Sarukura, N., Yokota, Y., Yanagida, T., & Yoshikawa, A., Structural and optical properties of neodymium-doped lutetium fluoride thin films grown by pulsed laser deposition. *Optical Materials*, 2013, 35(12):2329-2331.

Yamanoi, K., Minami, Y., Nishi, R., Shinzato, Y., Tsuboi, M., Luong, M.V., Nakazato, T., Shimizu, T., Sarukura, N., Cadatal-Raduban, M., Pham, M.H., Nguyen, H.D., Yokota, Y., Yoshikawa, A., Nagasono, M., & Ishikawa, T., VUV fluorescence from Nd<sup>3+</sup>:LuLiF<sub>4</sub> by two photon excitation using femtosecond

- laser. *Optical Materials*, 2013, 35(11):2030-2033.
- Yamanoi, K., Murata, T., Arikawa, Y., Nakazato, T., Cadatal-Raduban, M., Shimizu, T., Sarukura, N., Nakai, M., Norimatsu, T., Nishimura, H., Azechi, H., Fujino, S., Yoshida, H., Yoshikawa, A., Satoh, N., & Kan, H., Luminescence properties of Nd<sup>3+</sup> and Er<sup>3+</sup> doped glasses in the VUV region. *Optical Materials*, 2013, 35(11):1962-1964.
- 2012 Ieda, M., Ishimaru, T., Ono, S., Yamanoi, K., Cadatal-Raduban, M., Shimizu, T., Sarukura, N., Fukuda, K., Suyama, T., Yokota, Y., Yanagida, Y., & Yoshikawa, A., Optical characteristic improvement of neodymium-doped lanthanum fluoride thin films grown by pulsed laser deposition for vacuum ultraviolet application. *Japanese Journal of Applied Physics*, 2012, 51(2R):022603.
- Ogino, H., Shimoyama, J., Kishio, K., Katsura, Y., Tsuboi, M., Yamanoi, K., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., & Sarukura, N., Excitonic luminescence in two-dimensionally confined layered sulfide oxides. *Applied Physics Letters*, 2012, 101(19):191901.
- Murata, T., Arikawa, Y., Watanabe, K., Yamanoi, K., Cadatal-Raduban, M., Nagai, T., Kouno, M., Sakai, K., Nakazato, T., Shimizu, T., Sarukura, N., Nakai, M., Norimatsu, T., Nishimura, H., Azechi, H., Yoshikawa, A., Fujino, S., Yoshida, H., Izumi, N., Sato, N., & Kan, H., Fast-response and low-afterglow cerium-doped lithium 6 fluoro-oxide glass scintillator for laser fusion-originated down-scattered neutron detection. *IEEE Transactions on Nuclear Science*, 2012, 59(5):2256-2259.
- Yamanoi, K., Sakai, K., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Kano, M., Wakamiya, A., Fukuda, T., Nagasono, M., Togashi, T., Matsubara, S., Tono, K., Higashiya, A., Yabashi, M., Kimura, H., Ohashi, H., & Ishikawa, T., Indium-Doped ZnO Scintillator With 3-Ps Response Time for Accurate Synchronization of Optical and X-Ray Free Electron Laser Pulses. *IEEE Transactions on Nuclear Science*, 2012, 59(5):2298-2300.
- Nakazato, T., Shimizu, T., Yamanoi, K., Sakai, K., Takeda, K., Nishi, R., Minami, Y., Cadatal-Raduban, M., Sarukura, N., Nishimura, H., Azechi, H., Ehrentraut, D., Fukuda, T., Tanaka, M., & Kawachi, T., Potential High-Spatial Resolution In-Situ Imaging of Soft X-Ray Laser Pulses With ZnO Crystal. *IEEE Transactions on Nuclear Science*, 2012, 59(5):2294-2297.
- Kano, M., Wakamiya, A., Yamanoi, K., Sakai, K., Takeda, K., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., & Fukuda, T., Fabrication of In-Doped ZnO Scintillator Mounted on a Vacuum Flange. *IEEE Transactions on Nuclear Science*, 2012, 59(5):2290-2293.
- 2011 Yoshioka, T., Takatori, S., Pham, M.H., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Estacio, E., Misa, J.V., Jaculbia, R., Defensor, M., Somintac, A., & Salvador, A., Terahertz Emission from GaAs Films on Si(100) and Si(111) Substrates Grown by Molecular Beam Epitaxy. *Journal of Infrared, Millimeter, and Terahertz Waves*, 2011, 32(4):418-425.
- Estacio, E., Que, C.T., Yamamoto, K., Tani, M., Takatori, S., Pham, M.H., Yoshioka, T., Cadatal-Raduban, M., Sarukura, N., Hangyo, M., Edamura, T., Nakajima, M., Misa, J.V., Jaculbia, R., Somintac, A., & Salvador, A., Terahertz emission from GaAs and InAs thin films grown on Si substrates in the transmission-geometry optical excitation. *University Bulletin (大学紀要)*, University of Fukui, Japan, 2011, 12:204-212.

Ogawa, T., Sarukura, N., Watanabe, M., Fukuda, T., Nango, N., Arikawa, Y., Yamanoi, K., Nakazato, T., Cadatal-Raduban, M., Shimizu, T., Nakai, M., Norimatsu, T., Azechi, H., Murata, T., Fujino, S., Yoshida, H., Kamada, K., Usuki, Y., Suyama, T., Yoshikawa, A., Sato, N., Kan, H., Nishimura, H., Mima, K., Hosaka, M., Katoh, M., Kosugi, N., Fukuda, K., Yanagida, T., Yokota, Y., Saito, F., Sakai, K., Ehrentraut, D., Nagasono, M., Togashi, T., Higashiya, A., Yabashi, M., Ishikawa, T., Ohashi, H., & Kimura, H., Imaging of Radiation Accidents and Radioactive Contamination Using Scintillators. In: Nuclear Power Pavel Tsvetkov, IntechOpen, 2011: doi:10.5772/17270.

Kano, M., Wakamiya, A., Sakai, K., Yamanoi, K., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Ehrentraut, D., & Fukuda, T., Response-time-improved ZnO scintillator by impurity doping. *Journal of Crystal Growth*, 2011, 318(1):788-790.

Nagai, T., Ioka, Y., Hasegawa, A., Wada, K., Takaoku, S., Takata, M., Noritake, K., Minami, Y., Watanabe, K., Yamanoi, K., Arikawa, Y., Hirokazu, H., Nakamura, H., Watari, T., Cadatal-Raduban, M., Koga, M., Shimizu, T., Sarukura, N., Shiraga, H., Nakai, M., Norimatsu, T., & Azechi, H., Fast-response, Low-Afterglow 4,4''-Bis[(2-butyloctyl)oxy]-1,1':4,1''':4,1''''-quarterphenyl Dye-Based Liquid Scintillator for High-Contrast Detection of Laser Fusion-Generated Neutrons. *Japanese Journal of Applied Physics*, 2011, 50(8R):080208.

Shimizu, T., Yamanoi, K., Sakai, K., Cadatal-Raduban, M., Nakazato, T., Sarukura, N., Kano, M., Wakamiya, A., Ehrentraut, D., Fukuda, T., Nagasono, M., Togashi, T., Matsubara, S., Tono, K., Higashiya, A., Yabashi, M., Kimura, H., Ohashi, H., & Ishikawa, T., Response time-shortened zinc oxide scintillator for accurate single-shot synchronization of extreme ultraviolet free-electron laser and short-pulse laser. *Applied Physics Express*, 2011, 4(6):062701.

2010 Takatori, S., Minh, P.H., Estacio, E., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Bailon-Somintac, M., Somintac, A., Defensor, M., Gabayno, J., Awitan, F.C.B., Jaculbia, R.B., Garcia, A., Ponceca, C., Jr., Salvador, A., & Sarukura, N., Investigation of the terahertz emission characteristics of MBE-grown GaAs-based nanostructures. *Optical Materials*, 2010, 32(7):776-779.

Nakazato, T., Furukawa, Y., Shimizu, T., Cadatal-Raduban, M., Estacio, E., Sarukura, N., Shiroshta, A., Otani, K., Kadono, T., Shigemori, K., & Azechi, H., Observation of Complex Optical Processes in ZnSe under Extreme Optical Excitation from a Kilojoule-Class Nd:Glass Laser. *Japanese Journal of Applied Physics*, 2010, 49(6R):062601.

Takahashi, M., Osada, A., Dergachev, A., Moulton, P.F., Cadatal-Raduban, M., Shimizu, T., & Sarukura, N., Reduction of thermal dephasing by tight elliptical focusing perpendicular to walk-off plane leading to improved fourth harmonic generation in  $\beta$ -BaB<sub>2</sub>O<sub>4</sub>. *Proceedings of the CLEO/QELS: 2010 Laser Science to Photonic Applications*, 2010.

Takahashi, M., Osada, A., Dergachev, A., Moulton, P.F., Cadatal-Raduban, M., Shimizu, T., & Sarukura, N., Effects of pulse rate and temperature on nonlinear absorption of pulsed 262-nm laser light in  $\beta$ -BaB<sub>2</sub>O<sub>4</sub>. *Japanese Journal of Applied Physics*, 2010, 49(8R):080211.

Nakazato, T., Cadatal-Raduban, M., Yamanoi, K., Tsuboi, M., Furukawa, Y., Pham, M., Estacio, E., Shimizu, T., Sarukura, N., Fukuda, K., Suyama, T.,

Yanagida, T., Yokota, Y., Yoshikawa, A., & Saito, F., Nd<sup>3+</sup>:LaF<sub>3</sub> as a Step-Wise Excited Scintillator for Femtosecond Ultraviolet Pulses. *IEEE Transactions on Nuclear Science*, 2010, 57(3):1208-1210.

Takahashi, M., Osada, A., Dergachev, A., Moulton, P.F., Cadatal-Raduban, M., Shimizu, T., & Sarukura, N., Improved fourth harmonic generation in  $\beta$ -BaB<sub>2</sub>O<sub>4</sub> by tight elliptical focusing perpendicular to walk-off plane. *Journal of Crystal Growth*, 2010, 318(1):606-609.

Shimizu, T., Cadatal-Raduban, M., Yamanoi, K., Takatori, S., Kouno, M., Pham, M., Estacio, E., Nakazato, T., Sarukura, N., Kawaguchi, N., Fukuda, K., Suyama, T., Yanagida, T., Yokota, Y., Yoshikawa, A., & Saito, F., Er:LiCAF as Potential Vacuum Ultraviolet Laser Material at 163 nm. *IEEE Transactions on Nuclear Science*, 2010, 57(3):1204-1207.

2009 Estacio, E., Pham, M.H., Takatori, S., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Somintac, A., Defensor, M., Awitan, F.C.B., Jaculbia, R.B., Salvador, A., & Garcia, A., Strong enhancement of terahertz emission from GaAs in InAs/GaAs quantum dot structures. *Applied Physics Letters*, 2009, 94(23):232104.

Nakazato, T., Shimizu, T., Yamanoi, K., Takatori, S., Estacio, E., Cadatal, M.M., Sarukura, N., Nishimura, H., Mima, K., Tanaka, M., Nishikino, M., Ochi, Y., Ohba, T., Kaihori, T., Kawachi, T., Kagamitani, Y., Ehrentraut, D., & Fukuda, T., Single-Shot Focal Spot Image of EUV Laser Using a ZnO Scintillator. *Proceedings of the Conference on Lasers and Electro-Optics/International Quantum Electronics Conference, OSA Technical Digest (CD) (Optical Society of America, 2009)*, paper JThE38, 2009.

Furukawa, Y., Nakazato, T., Shimizu, T., Cadatal, M., Estacio, E., Sarukura, N., Shiroshita, A., Otani, K., Kadono, T., Shigemori, K., & Azechi, H., Three-photon lasing from ZnSe excited by a kilojoule-class Nd: glass laser. *Proceedings of the Conference on Lasers and Electro-Optics/International Quantum Electronics Conference, OSA Technical Digest (CD) (Optical Society of America, 2009)*, paper CTuW4, 2009.

Cadatal, M.M., Furukawa, Y., Yamanoi, K., Takatori, S., Pham, M., Estacio, E., Nakazato, T., Shimizu, T., Sarukura, N., Kitano, K., Ando, K., Uchiyama, K., Isobe, Y., Fukuda, K., Suyama, T., Yanagida, T., Yoshikawa, A., & Saito, F., Development of Vacuum Ultraviolet Streak Camera System with Bright Spectrograph for the Evaluation of Luminescent Materials. *Proceedings of the Conference on Lasers and Electro-Optics/International Quantum Electronics Conference, OSA Technical Digest (CD) (Optical Society of America, 2009)*, paper JThE36, 2009.

Shimizu, T., Cadatal, M., Yamanoi, K., Takatori, S., Pham, M., Estacio, E., Nakazato, T., Sarukura, N., Fukuda, K., Suyama, T., Yanagida, T., Yoshikawa, A., & Saito, F., Er: LiCAF as potential vacuum ultraviolet laser material at 163 nm. *Proceedings of the 2009 Conference on Lasers and Electro-Optics and 2009 Conference on Quantum electronics and Laser Science Conference*, 2009.

Estacio, E., Pham, M.H., Takatori, S., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Somintac, A., Defensor, M., Garcia, A., Salvador, A.,, Enhanced terahertz emission from GaAs in MBE-grown InAs/GaAs quantum dot structures. *Proceedings of the 2009 34<sup>th</sup> International Conference on Infrared, Millimeter, and Terahertz Waves*, 2009.

Cadatal, M., Furukawa, Y., Ono, S., Pham, M., Estacio, E., Nakazato, T.,

Shimizu, T., Sarukura, N., Fukuda, K., Suyama, T., Yoshikawa, A., & Saito, F., Vacuum ultraviolet luminescence from a micro-pulling-down method grown  $\text{Nd}^{3+}:(\text{La}_{0.9},\text{Ba}_{0.1})\text{F}_{2.9}$ . *Journal of Luminescence*, 2009, 129(12):1629-1631.

Saito, S., Estacio, E., Nakazato, T., Furukawa, Y., Shimizu, T., Sarukura, N., Cadatal, M., Pham, M.H., Ponceca, C., Jr., Mizuseki, H., & Kawazoe, Y., Observation of birefringence in BBO crystals in the terahertz regime. *Journal of Crystal Growth*, 2009, 311(3):895-898.

Umezawa, R., Nagasaka, R., Cadatal, M., Ono, S., Sarukura, N., & Ichikawa, Y., Terahertz-Radiation Photoconductive Antenna in Sputtered Zinc Oxide Thin Film. *Japanese Journal of Applied Physics*, 2009, 48(3R):030209.

Furukawa, Y., Cadatal, M., Yamanoi, K., Takatori, S., Pham, M., Estacio, E., Nakazato, T., Shimizu, T., Sarukura, N., Kitano, K., Ando, K., Uchiyama, K., Isobe, Y., Fukuda, K., Suyama, T., Yanagida, T., Yokota, Y., Yoshikawa, A., & Saito, F., Development of vacuum ultraviolet streak camera system for the evaluation of vacuum ultraviolet emitting materials. *Japanese Journal of Applied Physics*, 2009, 48(9R):096503.

Estacio, E., Pham, M.H., Takatori, S., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Somintac, A., Defensor, M., Awitan, F.C.B., Jaculbia, R.B., Salvador, A., & Garcia, A., Strong enhancement of terahertz emission from GaAs in InAs/GaAs quantum dot structures. *Applied Physics Letters*, 2009, 94(23):232104.

Takahashi, M., Masada, G., Sekine, I., Cadatal, M., Shimizu, T., Sarukura, N., Byeon, C., Fedorov, V., Mirov, S., Dergachev, A., & Moulton, P.F., Reduction of Nonlinear Absorption in  $\text{Li}_2\text{B}_4\text{O}_7$  by Temperature- and Repetition Rate-Control. *Japanese Journal of Applied Physics*, 2009, 48(11R):112502.

2008 Furukawa, Y., Cadatal, M., Seo, Y.-S., Ono, S., Estacio, E., Murakami, H., Fujimoto, Y., Sarukura, N., Nakatsuka, M., Fukuda, K., Simura, R., Suyama, T., & Yoshikawa, A., Optical Properties of Micro-Pulling Down Method Grown  $\text{Nd}^{3+}:(\text{La}_{1-x},\text{Ba}_x)\text{F}_{3-x}$  as Potential Vacuum Ultraviolet Laser Material and Scintillator. *Optical Materials and Optical Devices*, 2008, 36:1303-1305.

Cadatal, M., Pham, M.H., Tatsumi, T., Saiki, A., Furukawa, Y., Estacio, E., Sarukura, N., Fukuda, K., Kim, K.J., Yoshikawa, A., & Saito, F., Ce:LiCAF Crystal Grown by the Micro-Pulling Down Method and its Ultraviolet Lasing Properties. *Advanced Solid-State Photonics, OSA Technical Digest Series (CD)* (Optical Society of America, 2008), paper WB18, 2008.

Takahashi, M., Sekine, I., Cadatal, M., Sarukura, N., Moulton, P.F., & Dergachev, A., Reduction of Non-Linear Absorption in  $\text{Li}_2\text{B}_4\text{O}_7$  by Controlling Temperature and Repetition Rate-Control. *Advanced Solid-State Photonics, OSA Technical Digest Series (CD)* (Optical Society of America, 2008), paper MC32, 2008.

Estacio, E.S., Saito, S., Nakazato, T., Furukawa, Y., Tatsumi, T., Pham, M.H., Cadatal, M., Ponceca, C., Jr., Mizuseki, H., Kawazoe, Y., & Sarukura, N., Terahertz Birefringence of  $\beta\text{-BaB}_2\text{O}_4$  (BBO) Crystal. *Proceedings of the 2008 Conference on Lasers and Electro-Optics and 2008 Conference on Quantum Electronics and Laser Science*, 2008.

Cadatal, M., Furukawa, Y., Seo, Y.-S., Ono, S., Estacio, E., Murakami, H., Fujimoto, Y., Sarukura, N., Masahiro, N., Fukuda, K., Simura, R., Suyama, T., Yoshikawa, A., & Saito, F., Vacuum ultraviolet optical properties of a micro-pulling-down-method grown  $\text{Nd}^{3+}:(\text{La}_{0.9}, \text{Ba}_{0.1}) \text{F}_{2.9}$ . *Optical Society*, 2008,

B25:B27-B31.

Estacio, E., Saito, S., Nakazato, T., Furukawa, Y., Sarukura, N., Cadatal, M., Pham, M.H., Ponseca, C., Jr., Mizuseki, H., & Kawazoe, Y., Birefringence of  $\beta$ -BaB<sub>2</sub>O<sub>4</sub> crystal in the terahertz region for parametric device design. *Applied Physics Letters*, 2008, 92(9):091116.

Pham, M.H., Cadatal, M.M., Tatsumi, T., Saiki, A., Furukawa, Y., Nakazato, T., Estacio, E., Sarukura, N., Suyama, T., Fukuda, K., Kim, K.J., Yoshikawa, A., & Saito, F., Laser quality Ce<sup>3+</sup>: LiCaAlF<sub>6</sub> grown by micro-pulling-down method. *Japanese Journal of Applied Physics*, 2008, 47(7R):5605.

2007 Ponseca, C., Cadatal, M., Pobre, R., Quiroga, R., Murakami, H., Ono, S., Sarukura, N., Nishikawa, J., Suto, K., Sasaki, T., Tanno, T., & Tominaga, K., Accurate modeling of inter-and intra-molecular interactions in 1, 4-dihydroxynaphthalene in the 0.5-6 terahertz region. *Proceedings of the 2007 Conference on Lasers and Electro-Optics (CLEO)*, 2007.

Cadatal, M.M., Seo, Y., Tatsumi, T., Pham, M., Ponseca, C., Jr., Ono, S., Estacio, E., Furukawa, Y., Murakami, H., Fujimoto, Y., Sarukura, N., Nakatsuka, M., Fukuda, K., Simura, R., Suyama, T., Yoshikawa, A., & Fukuda, T., Nd<sup>3+</sup>: (La<sub>1-x</sub>Ba<sub>x</sub>)<sub>3-x</sub> as Vacuum Ultraviolet Scintillator and New Laser Material. *Proceedings of the Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference and Photonic Applications Systems Technologies*, 2007.

Cadatal, M., Seo, Y., Tatsumi, T., Pham, M., Ponseca, C., Jr., Ono, S., Estacio, E., Furukawa, Y., Murakami, H., Fujimoto, Y., Sarukura, N., Nakatsuka, M., Fukuda, K., Simura, R., Suyama, T., Yoshikawa, A., & Fukuda, T., Nd<sup>3+</sup>:(La<sub>1-x</sub>Ba<sub>x</sub>)F<sub>3-x</sub> Grown via Micro-PD as New Vacuum Ultraviolet Scintillator and Potential Laser Material. *Proceedings of the Conference on Lasers and Electro-Optics/Pacific Rim*, 2007.

Ponseca, C., Estacio, E., Cadatal, M., Pobre, R., Quiroga, R., Murakami, H., Ono, S., Sarukura, N., Nishikawa, J., Suto, K., Sasaki, T., Tanno, T., & Tominaga, K., Numerical calculations of the Frequency Spectra of naphthalene and 1, 4-dihydroxynaphthalene in the 0.5-to 6 terahertz region. *Proceedings of the 2007 Conference on Lasers and Electro-Optics - Pacific Rim*, 2007.

Almoro, P., Cadatal, M., & Daza, M.R., Measurement of Three-Dimensional Deformations by Phase-Shifting Digital Holographic Interferometry. *Science Diliman*, 2007, 15(1):32-36.

Sarukura, N., Murakami, H., Estacio, E., Ono, S., Oenzerfi, R.E., Cadatal, M., Nishimatsu, T., Terakubo, N., Mizuseki, H., Kawazoe, Y., Yoshikawa, A., & Fukuda, T., Proposed design principle of fluoride-based materials for deep ultraviolet light emitting devices. *Optical Materials*, 2007, 30(1):15-17.

Cadatal, M., Seo, Y.S., Ono, S., Furukawa, Y., Estacio, E., Murakami, H., Fujimoto, Y., Sarukura, N., Nakatsuka, M., Suyama, T., Fukuda, K., Simura, R., & Yoshikawa, A., Nd<sup>3+</sup>:(La<sub>1-x</sub>Ba<sub>x</sub>)F<sub>3-x</sub> Grown via Micro-Pulling Down Method as Vacuum Ultraviolet Scintillator and Potential Laser Material. *Japanese Journal of Applied Physics*, 2007, 46(2):36-40.

2006 Ponseca, C.S., Quema, A.V., de los Reyes, G., Estacio, E., Cadatal, M.M., Pobre, R., Quiroga, R., Murakami, H., Ono, S., Sarukura, N., Tanno, T., Sasaki, T., Suto, K., Nishikawa, J., & Tominaga, K., Terahertz transmission spectroscopic analysis of mono-and di-substituted hydroxynaphthalenes in



the 0.5-to 6-THz region using GaP THz wave generator. Proceedings of the 2006 Joint 31<sup>st</sup> International Conference on Infrared Millimeter Waves and 14<sup>th</sup> International Conference on Terahertz Electronics, 2006.

Ponseca, C.S., Quema, A.V., Estacio, E., Cadatal, M.M., Murakami, M., Ono, S., Sarukura, N., Argyros, A., Large, M.C.J., & van Eijkelenborg, M.A., Terahertz-time domain spectroscopy of microstructured poly (methylmetacrylate) polymer fiber. Proceedings of the 2006 Joint 31<sup>st</sup> International Conference on Infrared Millimeter Waves and 14<sup>th</sup> International Conference on Terahertz Electronics, 2006.

2005 Torres, M.L.Y., Cadatal, M.M., & Garcia, W.O., A Nd: YAG Laser-Pumped Hydrogen Raman Shifter with Capillary Waveguide. *Science Diliman*, 2005, 17(1):37-46.

2004 Cadatal, M., & Almoró, P., Pulsed full-color digital holography with a hydrogen Raman shifter. *Applied optics: A publication of the Optical Society of America*, 2004, 11:2267-2271.

Cadatal, M., Torres, M.L., & Garcia, W., Temporal Coherence Behavior of a Nd: YAG Pumped Waveguide Raman Shifter. *Science Diliman*, 2004, 16(2):95-100.

**Name** Maria Vivian C. Camacho Grageda

**Sex** Female

**Organizational Affiliations**

Manager, Limnological Research Station, Animal Biology Division, Institute of Biological Sciences, CAS Annex 1 (NCAS), University of the Philippines Los Baños

**Fields of Specialization**

Marine Science

Marine Ecology

Aquatic Ecology

Fisheries Science

Fish Biology

Limnology

**Employment**

Assistant Professor, University of the Philippines Los Baños, 1992 June-Present

**Papers Presented**

2010 November 5 Coronado, A.S., Camacho, M.V.C., Lontoc, B.M., & Ocampo, P.P. (2010 November 5). Population Growth and Size-Class Distribution of *Moina micrura* Krunz Reared in Six Culture Methods, 14<sup>th</sup> Southern Luzon Zonal Research and Development Symposium and Planning Workshop, Western Philippines University, Puerto Princesa Campus, Puerto Princesa, Palawan.

2010 April Coronado, A.S., Martinez-Goss, M.R., & Camacho, M.V. (2010 April). Phytoplankton and Zooplankton Community Structure in Bunot Lake, San Pablo City, Laguna, Philippines, 4<sup>th</sup> National Symposium and Scientific Meeting of Philippine Phycological Society, Inc., Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) Auditorium, University of the Philippines Los Baños, Laguna, Philippines.

**Publications**

2013 Corpuz, M.N.C., Camacho, M.V.C., & Ocampo, P.P., Morphometric and Morphometric Variations in Five Populations of Indigenous Celebes Goby *Glossogobius celebius* (Perciformes: Gobiidae) from Southern Luzon, Philippines. *Philippine Agricultural Scientist*, 2013, 96(1):75-85.

2010 Coronado, A.S., Martinez-Goss, M.R., & Camacho, M.V.C., Phytoplankton and Zooplankton Community Structure in Bunot Lake, San Pablo City, Laguna, Philippines. *Proceedings of the 4<sup>th</sup> National Symposium and Scientific Meeting of Philippine Phycological Society*, 2010.

Coronado, A.S., Camacho, M.V.C., Lontoc, B.M., & Ocampo, P.P., Population Growth and Size-Class Distribution of *Moina micrura* Krunz Reared in Six Culture Methods. *Proceedings of the 14<sup>th</sup> Southern Luzon Zonal Research and Development Symposium and Planning Workshop*, Puerto

Princesa, Palawan, 2010.

- 2008 Grageda, M.V.C., Kotani, T., Sakakura, Y., & Hagiwara, A., Effects of feeding copepod and Artemia on early growth and behaviour of the self-fertilizing fish, *Rivulus marmoratus*, under laboratory conditions. *Aquaculture*, 2008, 281(1-4):100-105.
- 2005 Grageda, M.V.C., Sakakura, Y., Minamimoto, M., & Hagiwara, A., Differences in life-history traits in two clonal strains of the self-fertilizing fish, *Rivulus marmoratus*. *Environmental Biology of Fishes*, 2005, 73(4):427-436.
- 2004 Camacho Grageda, M.V., Sakakura, Y., & Hagiwara, A., Early development of the self-fertilizing mangrove killifish *Rivulus marmoratus* reared in the laboratory. *Ichthyological Research*, 2004, 51(4):309-315.

**Name** Alma O. Canama

**Sex** Female

**Organizational Affiliations**

University Researcher II, Institute of Plant Breeding, College of Agriculture and Food Science, University of the Philippines Los Baños, 4031 College, Laguna, Philippines

**Education**

Master of Science in Genetics, University of the Philippines Los Baños, Laguna, Philippines

**Fields of Specialization**

Plant Genetics

Plant Pathology

Plant Genetic Resources

**Association Membership**

Senior Adviser, Adventist Ministry to College and University Students (AMICUS) - UPLB Chapter

**Honors / Awards**

Outstanding Young Scientist Award, NAST-DOST 2013

**Researches**

**Completed**

Fine Mapping of Bacterial Stalk Rot Resistance Loci in Tropical White Maize

Molecular Characterization of Philippine Maize Populations

**Publications**

- 2017 Maravilla, A.M.B., Ocampo, E.T.M., Canama, A.O., & Delfin, E.F., Hybridity Testing of Eggplant F1 Progenies Derived from Parents with Varying Response to Drought Using SSR Markers. *Philippine Journal of Science*, 2017, 146(3):277-286.
- 2016 Saracanalao, R.J.R., Ocampo, E.T.M., Canama, A.O., Manaday, S.J., Maghirang, R.G., & Delfin, E.F., SSR-based genetic relationship in eggplant (*Solanum melongena*) genotypes with varying morphological response to drought. *Philippine Journal of Crop Science*, 2016, 41(3):57-64.
- Galvez, H.F., Canama, A.O., Gardoce, R.R., Caoili, B.L., Sison, M.L.J., Quilloy, R.B., Lantican, D.V., Dancel, M.P., Cortaga, C.Q., Rivera, S.M., Emmanuel, E.E., Cueto, C.C., Trinidad, L.C., Strickler, S.S., Fernandez-Pozo, N., & Mueller, L.A., Genomics approach to mine genes and search for genetic material towards insect resistance breeding in coconut. *Philippine Journal of Crop Science*, 2016, 42:32-33.
- Valencia, L., Lorenzo, J.C.A., Canama, A.O., Ibarra, A.C., & Galvez, H.F., Baseline studies in pineapple cv. 'Queen' pollen grains towards intensified pineapple breeding program. *Philippine Journal of Crop Science*, 2016, 42:111.

- Lorenzo, J.C.A., Canama, A.O., Valencia, L., Canicosa, J.E.B., & Galvez, H.F., Mutation induction in pineapple through seed EMS [ethylmethane sulfonate] mutagenesis. *Philippine Journal of Crop Science*, 2016, 42(supplement):115.
- 2015 Fernandez, E.C.J., Cortes, R.V., Alcasid, R.E., Lantican, D.V., Canama, A.O., Dolores, L.M., Quilloy, R.B., & Galvez, H.F., Virus resistance and molecular mutational analysis of tomato mutant lines. *Philippine Journal of Crop Science*, 2015, 40(supplement):107.
- Cardona, D.E.M., Manohar, A.N.C., Isabedra, A.C.I., Canama, A.O., Rivera, R.L., & Reano, C.E., SSR polymorphism analysis among coconut (*Cocos nucifera* L.) parental genotypes towards genetic mapping for copra yield and quality. *Philippine Journal of Crop Science*, 2015, 40:86-87.
- Galvez, H.F., Lantican, D.V., Dancel, M.P., Malijan, A.K.B., Canama, A.O., Quilloy, R.B., Elmido, E.L., & Cueto, C.A., Towards coconut scale insect resistance breeding of selected coconut varieties. *Philippine Journal of Crop Science*, 2015, 40:102.
- 2014 Manaday, S.J., Canama, A., Ocampo, E.T., Maghirang, R., & Delfin, E., Screening of eggplant germplasm for the development of drought-tolerant varieties. *Philippine Journal of Crop Science*, 2014, 39:29.
- Fernandez, E.C.J., Galvez, H.F., Canama, A.O., Lantican, D.V., Quilloy, R.B., & Ripalda, R.R., Microsatellite DNA analysis of corn (*Zea mays* L.) inbred lines selected for downy mildew resistance. *Philippine Journal of Crop Science*, 2014, 39:41.
- Saracanlao, R.J., Ocampo, E.T.M., Canama, A.O., Manaday, S.J., Maghirang, R., & Delfin, E., SSR-based genetic relationship in eggplant genotypes with varying morphological response to drought. *Philippine Journal of Crop Science*, 2014, 39:43-44.
- Galvez, H.F., Canama, A.O., Quilloy, R.B., Cortes, R.V., Lantican, D.V., Ripalda, R.R., Schafleitner, R., Yen, J., Kebasen, B.A., & Tandang, L.L., Phenotypic characterization and molecular screening of induced mutation in tomato for virus resistance. *Philippine Journal of Crop Science*, 2014, 39:41-42.
- 2013 Canama, A.O., Fajardo, R.H., Dolores, L.M., & Reyes, M.E.C., Detection and confirmation of Ty genes in ToLCV-resistant tomato lines. *Philippine Journal of Crop Science*, 2013, 38:94-95.
- Lantican, D.V., Canama, A.O., Malijan, A.K.B., Pascual, C.B., Quilloy, R.B., Manguiat, P.H., & Galvez, H.F., Optimization of QTL region for downy mildew resistance corn. *Philippine Journal of Crop Science*, 2013, 38:93.
- 2012 Ripalda, R.R., Hautea, D.M., Narciso, J.O., & Canama, A.O., Inheritance and expression of cry1Ac gene in Bt eggplant backcross populations in the Philippines. *Philippine Journal of Crop Science*, 2012, 37(3):1-9 ref.42.
- 2011 Galvez, H.F., Malijan, A.K.B., Canama, A.O., Pascual, C.B., Manguiat, P.H., Quilloy, R.B., Jubay, M.L.S., Tongson, E.J.U., Ripalda, R.R., & Hautea, D.M., Marker-assisted breeding of downy mildew resistant corn for the Philippines. XX International Plant and Genome (PAG) Conference, 2011, 36:33.
- 2010 Canama, A.O., & Hautea, D.M., Molecular Mapping of Resistance to Bacterial Stalk Rot (*Pectobacterium chrysanthemi* pv. *zea* Burk., McFad. and Dim.) in Tropical White Maize (*Zea mays* L.). *The Philippine Agricultural Scientist*, 2010, 93(4):429-438.

- 2004 Hautea, D.M., Molina, G.C., Balatero, C.H., Coronado, N.B., Perez, E.B., Alvarez, M.T.H., Canama, A.O., Akuba, R.H., Quilloy, R.B., Frankie, R.B., & Caspillo, C.S., Analysis of induced mutants of Philippine with molecular markers. In: Banana Improvement: Cellular, Molecular Biology and Induced Mutations. *Jain, S.M., & Swennen, R., Eds., 2004:45-57.*
- 2003 George, M.L.C., Prasanna, B.M., Rathore, R.S., Setty, T.A.S., Kasim, F., Azrai, M., Vasal, S., Balla, O., Hautea, D., Canama, A., Regalado, E., Vargas, M., Khairallah, M., Jeffers, D., & Hoisington, D., Identification of QTLs conferring resistance to downy mildews of maize in Asia. *Theoretical and applied genetics, 2003, 107:544-551.*
- 2002 Canama, A.O., Ruswandi, D., Latiza, M.A., Balatero, C.H., & Hautea, D.M., Genetic linkage map of maize for localization of resistance gene against maize downy mildew [*Perenosclenospora philippinensis* (Weston) Shaw]. *Philippine Crop Journal, 2002.*

**Name** Anna Pauline O. de Guia

**Sex** Female

**Organizational Affiliations**

Curator for Small Mammals, Museum of National History, University of the Philippines Los Baños, Laguna, Philippines

**Education**

Doctor of Philosophy in Environmental Resources, Graduate School of Agriculture, Hokkaido University, Sapporo, Hokkaido, Japan

Master of Science in Wildlife Studies, University of the Philippines Los Baños, Laguna, Philippines

Bachelor of Science in Zoology, University of the Philippines Los Baños, Laguna, Philippines

**Fields of Specialization**

Mammalogy

Wildlife Biology

Biodiversity

Fauna

Mitochondrial DNA

Molecular Biology

Ecology

Evolutionary Biology

**Papers Presented**

- 2007 Saitoh, T., de Guia, A.P., Kato, Y., & Maekawa, K. (2007 October 1-5).  
October 1-5 Taxonomic, Genetic and Ecological Status of the Daikoku Vole, International Symposium, "The Origin and Evolution of Natural Diversity". Sapporo, Japan.

**Publications**

- 2016 Parilla, R.B., Laude, R.P., de Guia, A.P.O., Espaldon, M.V.O., & Florece, L.M., Local Communities' Knowledge, Attitude and Perception Toward Cebu Black Shama (*Copsychus cebuensis* Steere) and its Habitat Characteristics: Implications for Conservation in Cebu Island, Philippines. *Journal of Environmental Science and Management*, 2016, 19(2):76-83.
- 2015 Ong, B.K.C., Paller, V.G.V., de Guia, A.P.O., Balatibat, J.B., & Gonzalez, J.C.T., Prevalence of avian haemosporidians among understorey birds of Mt. Banahaw de Lucban, Philippines. *Raffles Bulletin of Zoology*, 2015, 63:279-286.
- 2014 de Guia, A.P.O., & Quibod, M.N.R.M., Gut Analysis of Small Non-Volant Mammals of Mt. Makiling, Luzon Island, Philippines. *Journal of Environmental Science and Management*, 2014, 17(2):63-68.

- Reginaldo, A.A., & de Guia, A.P.O., Species richness and patterns of occurrence of small non-flying mammals of Mt. Sto Tomas, Luzon Island, Philippines. *Philippine Science letters*, 2014, 7(1):37-44.
- 2013 Kawai, K., Hailer, F., de Guia, A.P., Ichikawa, H., & Saitoh, T., Refugia in Glacial Ages Led to the Current Discontinuous Distribution Patterns of the Dark Red-backed Vole *Myodes rex* on Hokkaido, Japan. *Zoological Science*, 2013, 30:642-650.
- Lopez, R.V., Jr., Lambio, A.L., Vega, R.S.A., & de Guia, A.P.O., Phenotypic characterization of native chicken in Palawan, Philippines. *Philippine Journal of Veterinary and Animal Sciences*, 2013, 39(2):147-156.
- 2011 de Guia, A.P.O., Alviola, P.A., Gonzalez, J.C.T., & Cervancia, C.R., Small Mammal And Understorey Bird Species Diversity Along Elevational Gradients In Mount Makiling, Philippines. *National Research Council of the Philippines Research Journal*, 2011, 11(1).
- de Guia, A.P.O., & Saitoh, T., Evolutionarily Significant Units of Gray-Sided Vole (*Myodes rufocanus*) in Hokkaido, Japan. *Philippine Journal of Science*, 2011, 140(1):41-50.
- Fernandez, D.A.P., & de Guia, A.P.O., Feeding habits of Visayan leopard cats (*Prionailurus bengalensis rabori*) in sugarcane fields of Negros Occidental, Philippines. *Asia Life Sciences*, 2011, 20(1):143-154.
- 2008 Saitoh, T., de Guia, A.P., Kato, Y., & Maekawa, K., Taxonomic, Genetic and Ecological Status of the Daikoku Vole. *Proceedings of the International Symposium, "The Origin and Evolution of Natural Diversity"*, Sapporo, Japan, 2008.
- 2007 de Guia, A.P., Saitoh, T., Ishibashi, Y., & Abe, H., Taxonomic status of the vole in Daikoku Island, Hokkaido, Japan: examination based on morphology and genetics. *Mammal Study*, 2007, 32:33-44.
- de Guia, A.P.O. & Saitoh, T., The gap between the concept and definitions in the Evolutionarily Significant Unit: The need to integrate neutral genetic variation and adaptive variation. *Ecological Research*, 2007, 22(4):604-612.
- 1999 de Guia, A.P.O., Distribution of non-volant mammals of nine small islands of the Calamianes Island Group, Northern Palawan, Philippines. *Asia Life Sciences*, 1999, 8:121-128.



**Name** Ayolani De Lara

**Sex** Female

**Organizational Affiliations**

Graduate Faculty for ZOO, and Member, Academic Personnel Board, Animal Biology Division, Institute of Biological Sciences, University of the Philippines Los Baños, Room A-306 and Malacology Laboratory, Uichanco Wing, L.B. Uichanco Hall (BioSci), University of the Philippines Los Baños, Laguna, Philippines

**Education**

Doctor of Philosophy in Zoology, University of the Philippines, Diliman, Quezon City 1991

**Fields of Specialization**

Malacology

Histology

Fisheries

Conservation Biology

Zoology

Parasitology

**Association Membership**

Regular Member, National Research Council of the Philippines

**Papers Presented**

2004 April 21 de Lara, A.V. (2004 April 21). Histopathological changes induced by chemical molluscicides and plant extracts on three economically and medically important gastropod snails, Elpidio Quirino Professorial Chair Lecture, College, Laguna, Philippines.

2003 March 4 de Lara, A.V. (2003 March 4). Comparative life history patterns of two economically important apple snails, A Metro Manila Commission Professorial Chair Lecture, Plant Pathology Auditorium, University of the Philippines, Los Baños.

2002 October 21-24 Panaligan, M.E.V., Leonardo, L.L., de Lara, A.V., Catabay, A.C., Tiu, W.U., Amarillo, M.L., & Rivera, P.T. (2002 October 21-24). Evaluation of the molluscicidal activity of *Nerium oleander* Linn. against *Oncomelania hupensis quadrasi* Von Mollendorf, International Congress on Medical and Applied Malacology, Los Baños, Laguna, Philippines.

2002 October 21-24 de Chavez, E.R.C., & de Lara, A.V. (2002 October 21-24). Effects of copper (Cu<sup>2+</sup>), Zn (Zn<sup>2+</sup>), lead (Pb<sup>2+</sup>) and Cadmium (Cd<sup>2+</sup>) on the early development of freshwater snail, *Radix quadrasi*, International Congress on Medical and Applied Malacology, Los Baños, Laguna, Philippines.

- 2002 de Lara, A.V., Borlongan, I.G., & Colloso, R.M. (2002 October 21-24). Structural changes induced by metaldehyde on the brackishwater pond snail, *Cerithidea cingulata*, International Congress on Medical and Applied Malacology, Los Baños, Laguna, Philippines.
- 1997 August 22 de Lara, A.V. (1997 August 22). Effects of heavy metals on the three species of freshwater snails, San Miguel Professorial Chair Lecture, College, Laguna, Philippines.
- 1994 May 3-6 de Lara, A.V. (1994 May 3-6). Ultra structure and elemental analysis of the digestive gland of the golden apple snail, Pest Management Council of the Philippines, Inc. Anniversary and Annual Scientific Meeting, Cagayan de Oro City, Philippines.
- 1994 May 3-6 San Pedro, M.R.T., & de Lara, A.V. (1994 May 3-6). Histopathological effect of neem (*Azadirachta indica* A. Juss) seed kernel extract on the digestive gland and ovary of the golden apple snail, *Pomacea* sp., Pest Management Council of the Philippines, Inc. Anniversary and Annual Scientific Meeting, Cagayan de Oro City, Philippines.
- 1994 May 3-6 Ebuenga, M.D., de Lara, A.V., Cayabyab, B.F., & Bayot, R.G. (1994 May 3-6). Yield loss assessment of *Pomacea* spp. damage in lowland rice, Pest Management Council of the Philippines, Inc. Anniversary and Annual Scientific Meeting, Cagayan de Oro City, Philippines.

#### Publications

- 2013 Vedra, S.A., Ocampo, P.P., de Lara, A.V., Rebanco, C.M., Pacardo, E.P., & Briones, N.D., Indigenous goby population in Mandulog river system and its conservation by communities in Iligan City, Philippines. *Journal of Environmental Science and Management*, 2013, 16(2):11-18.
- 2011 de Chavez, E.R.C., & de Lara, A.V., Diversity and spatial distribution patterns of macro land snails in Mount Makiling Forest Reserve, Philippines. *Asia Life Sciences*, 2011, 20(1):185-201.
- 2008 Superales, J.B., Zafaralla, M.T., Baguion, N.T., Macandog, D.M., de Lara, A.V., & Pulhin, J.T., Organic matter turn-over of *Rhizophora* species litterfall at Moro Gulf, Western Mindanao, Philippines. *Nature's Bulletin*, 2008, 7(1):41-52.
- 2004 de Lara, A.V., Histopathological changes induced by chemical molluscicides and plant extracts on three economically and medically important gastropod snails. *Proceedings of the Elpidio Quirino Professorial Chair Lecture, College, Laguna, Philippines*, 2004:27 p.
- 2003 de Chavez, E.R.C., & de Lara, A.V., Effects of zinc ( $Zn^{2+}$ ) and lead ( $Pb^{2+}$ ) on the early development of the freshwater snail, *Radix quadrasi*. *Journal of Medical and Applied Malacology*, 2003, 12:59-68.  
de Lara, A.V., Comparative life history patterns of two economically important apple snails. Presented for A Metro Manila Commission Professorial Chair Lecture, Plant Pathology Auditorium, University of the Philippines, Los Baños, 2003.
- 2002 Panaligan, M.E.V., Leonardo, L.L., de Lara, A.V., Catabay, A.C., Tiu, W.U., Amarillo, M.L., & Rivera, P.T., Evaluation of the molluscicidal activity of

- Nerium oleander* Linn. against *Oncomelania hupensis quadrasi* Von Mollendorf. Proceedings of the International Congress on Medical and Applied Malacology, Los Baños, Laguna, Philippines, 2002.
- de Chavez, E.R.C., & de Lara, A.V., Effects of copper ( $\text{Cu}^{2+}$ ), Zn ( $\text{Zn}^{2+}$ ), lead ( $\text{Pb}^{2+}$ ) and Cadmium ( $\text{Cd}^{2+}$ ) on the early development of freshwater snail, *Radix quadrasi*. Proceedings of the International Congress on Medical and Applied Malacology, Los Baños, Laguna, Philippines, 2002.
- de Lara, A.V., Borlongan, I.G., & Colloso, R.M., Structural changes induced by metaldehyde on the brackishwater pond snail, *Cerithidea cingulata*. Proceedings of the International Congress on Medical and Applied Malacology, Los Baños, Laguna, Philippines, 2002.
- 1997 de Lara, A.V., Effects of heavy metals on the three species of freshwater snails. Proceedings of the San Miguel Professorial Chair Lecture, College, Laguna, Philippines, 1997:36 p.
- 1994 de Lara, A.V., Ultra structure and elemental analysis of the digestive gland of the golden apple snail. Proceedings of the Pest Management Council of the Philippines, 1994.
- San Pedro, M.R.T., & de Lara, A.V., Histopathological effect of neem (*Azadirachta indica* A. Juss) seed kernel extract on the digestive gland and ovary of the golden apple snail, *Pomacea* sp.. Proceedings of the Pest Management Council of the Philippines, 1994.
- Ebuenga, M.D., de Lara, A.V., Cayabyab, B.F., & Bayot, R.G., Yield loss assessment of *Pomacea* spp. damage in lowland rice. Proceedings of the Pest Management Council of the Philippines, 1994.
- 1993 Cariaso, M.R., de Lara, A.V., Cayabyab, B.F., & Ebuenga, M.D. (eds.), Abstract bibliography on apple snail. University of the Philippines Los Baños, 1993:93.
- 1987 Saxena, R.C., de Lara, A.V., & Justo, H.D., Golden apple snail: a pest of rice. International Rice Resesarch Newsletter, 1987, 12(1):24-25.

**Name** Maria Genaleen Q. Diaz

**Sex** Female

**Organizational Affiliations**

Professor, Institute of Biological Sciences, College of Arts and Sciences, UP Los Baños, College, Laguna

**Education**

Doctor of Philosophy in Genetics, University of the Philippines Los Baños, College, Laguna 2002

Master of Science in Genetics, University of the Philippines Los Baños, College, Laguna 1993

Bachelor of Science in Biology (Genetics), College of Arts and Sciences, University of the Philippines Los Baños, College, Laguna 1986

Secondary, Pedro Guevarra Memorial High School, Santa Cruz, Laguna 1982

Primary, Santisima Cruz Elementary School, Santa Cruz, Laguna 1978

**Fields of Specialization**

Molecular genetics

Biology

Genetics (Plants)

Microbiology

Molecular Biology

**Association Membership**

Member, Gamma Sigma Delta Honor Society

**Honors / Awards**

Outstanding Young Scientist (Genetics), National Academy of Science and Technology, Department of Science and Technology 2006

Outstanding Junior Faculty in Biology, PHILOBIOSCIENTIA IBS-CAS 1998

German Academic Exchange Service (DAAD) Scholarship (Ph.D. Genetics), SEAMO-SEARCA 1997-1999

**Researches**

**Completed**

Molecular genetic analysis and identification of molecular markers in selected Philippine species of trichoderma

Gene discovery in coconut (*Cocos nucifera* L.)

Construction of metagenomic library of thermophilic microorganisms from Mt. Makiling Mudspring as potential source of restriction enzymes

Cloning of differentially expressed in normal and makapuno endosperms

CNA fingerprinting of *Bactrocera* sp in the Philippines

Establishment of isozyme markers in fishes collected from Laguna de Bay

Cytological studies in *Azolla*

### Papers Presented

- 2010 Cortez, M.J.V., de la Cruz, F.R., Montecillo, A.D., Nazareno, A.L., Reamillo, October 26- M.C.S., Rodriguez, J.J.B., Ulat, V.J.M., Pabico, J.P., Jose, E.C., Diaz, M.G.Q., & 27 Mendoza, E.R. (2010 October 26-27). A systems biology-based approach to predicting bioremediation outcomes, First National Conference on Bioremediation, Traders Hotel, Pasay City.

### Publications

- 2017 Dilla-Ermita, C.J., Tandayu, E., Juanillas, V.M., Detras, J., Lozada, D.N., Dwiyantri, M.S., Vera Cruz, C., Mbanjo, E.G.N., Ardales, E., Diaz, M.G., Mendioro, M., Thomson, M.J., & Kretzchmar, T., Genome-wide Association Analysis Tracks Bacterial Leaf Blight Resistance Loci In Rice Diverse Germplasm. *Rice*, 2017, 10(8):1-17.
- Catolos, M., Sandhu, N., Dixit, S., Shamsudin, N.A.A., Naredo, M.E.B., McNally, K.L., Henry, A., Diaz, M.G., & Kumar, A., Genetic loci governing grain yield and root development under variable rice cultivation conditions. *Frontiers in plant science*, 2017, 8:1763.
- 2015 Bulasag, A.S., del Agua, N.T., Punongbayan, A.S., & Diaz, M.G.Q., Short Communication: Development of microsatellite markers for genetic diversity analysis in *Glossogobius giuris* (Hamilton, 1822) and *Rhinogobius giurinus* (Rutter, 1897). *International Journal of Philippine Science and Technology*, 2015, 8(2):19-23.
- 2014 Jalani, G.S.P., Laude, R.P., Diaz, M.G.Q., Medina, C.dR., & Velasco, L.R.I., Genetic diversity of natural populations of *Bactrocera occipitalis* (Bezzi) and *B. philippinensis* Drew and *Hancock* (Diptera: Tephritidae) in selected mango producing areas in the Philippines using microsatellites. *Agrivita*, 2014, 36(3):217-228.
- Mohammadi, R., Mendioro, M.S., Diaz, G.Q., Gregorio, G.B., & Singh, R.K., Genetic analysis of salt tolerance at seedling and reproductive stages in rice (*Oryza sativa*). *Plant Breeding*, 2014, 133(5):548-559.
- 2013 Mohammadi, R., Mendioro, M.S., Diaz, G.Q., Gregorio, G.B., & Singh, R.K., Mapping quantitative trait loci associated with yield and yield components under reproductive stage salinity stress in rice (*Oryza sativa* L.). *Journal of Genetics*, 2013, 92(3):433-443.
- Delomen, M.L.C., Mendioro, M.S., & Diaz, M.G.Q., Morphometric analysis and DNA barcoding of fruit flies *Bactrocera occipitalis* (Bezzi) and *B. philippinensis* Drew and *Hancock* (Diptera:Tephritidae) from Cavite and Davao del Norte. *Philippine Journal of Science*, 2013, 142(1):69-76.
- Dela Cruz, R.Y., Laude, R.P., Diaz, M.G.Q., Laurena, A.C., Mendioro, M.S., & Mendoza, E.M.T., Polymerase chain reaction (PCR)-based cloning of partial cDNAs of selected genes in normal and mutant 'makapuno' endosperms of coconut (*Cocos nucifera* L.). *Philippine Agricultural Scientist*, 2013, 96(1):60-71.
- Maranan, F.S., & Diaz, M.G.Q., Research Note: Molecular diversity and DNA

- barcode identification of selected Philippine endemic Hoya species (Apocynaceae). *Philippine Agricultural Scientist*, 2013, 96(1):92-98.
- 2012 Ye, C., Argayoso, M.A., Redoña, E.D., Sierra, S.N., Laza, M.A., Dilla, C.J., Mo, Y., Thomson, M.J., Chin, J., Dela Viña, C.B., Diaz, G.Q., & Hernandez, J.E., Mapping QTL for heat tolerance at flowering stage in rice using SNP markers. *Plant Breeding*, 2012, 131(1):33-41.
- Cortez, M.J.V., de la Cruz, F.R., Montecillo, A.D., Nazareno, A.L., Reamillo, M.C.S., Rodriguez, J.J.B., Ulat, V.J.M., Pabico, J.P., Jose, E.C., Diaz, M.G.Q., & Mendoza, E.R., A Systems Biology-Based Approach to Predicting Bioremediation Outcomes. In: Addressing the Problems and Solutions of Environmental Pollution through Bioremediation. *Raymundo, A.K., Ed.*, National Academy of Science and Technology Monograph Series No. 18, 2012:129-130.
- 2011 Diaz, M.G.Q., Cloning and Sequence Analysis of Partial cDNAs of Selected Genes in Normal and Mutant 'Makapuno' Endosperms of Coconut (*Cocos nucifera* L.). *Transactions of the National Academy of Science and Technology. Abstracts of Papers*, 2011, 33(1).
- Diaz, M.G.Q., Selection of a Suitable Internal Control for Relative RT PCR-Based Expression Analysis in Normal and Mutant 'Makapuno' Endosperms of Coconut (*Cocos nucifera* L.). *Transactions of the National Academy of Science and Technology. Abstracts of Papers*, 2011, 31(1).
- Diaz, M.G.Q., Isolation and Characterization of Microsatellites in Selected Philippine Native and Endemic Gobiidae Species. *Transactions of the National Academy of Science and Technology. Abstracts of Papers*, 2011, 33(1).
- Diaz, M.G.Q., Transcript Profiling of Selected Genes in Normal and Mutant Makapuno Endosperms of Coconut (*Cocos nucifera* L.) Using Relative Rt-PCR. *Transactions of the National Academy of Science and Technology (Abstracts of Papers)*, 2011, 33(1).
- Lantican, N.B., Diaz, M.G.Q., Cantera, J.L., de los Reyes, F.L., Asuncion, K., & Raymundo, A.K., Microbial community of a volcanic mudspring in the Philippines as revealed by 16S rDNA sequence analysis and fluorescence in situ hybridization. *World Journal of Microbiology & Biotechnology*, 2011, 27(4):859-867.
- Ye, C., May A. Argayoso, M.A., Redoña, E.D., Sierra, S.N., & Diaz, M.G.Q., et al., Mapping QTL for heat tolerance at flowering stage in rice using SNP markers. *Plant Breeding*, 2011, 131(1):33-41.
- Siar, S.V., Dalu, J.A., Roldan, C.D., Redondo, M.C., Diaz, M.G.Q., & Carandang, J.M., Research Note: Chromosomal characteristics and behavior of four Philippine endemic Hoyas: *Hoya crassicaulis* Elmer ex Kloppenburg, *H. merrillii* Schlechter, *H. mcgregorii* Schlechter and *H. pubicalyx* Merrill. *Philippine Journal of Crop Science*, 2011, 36(3):65-69.
- Dela Cruz, R.Y., Laude, R.P., Diaz, M.G.Q., Laurena, A.C., Mendioro, M.S., & Mendoza, E.M.T., Gene for actin is a suitable internal reference for relative RT-PCR based expression analysis in normal and mutant makapuno endosperms of coconut (*Cocos nucifera* L.). *Philippine Agricultural Scientist*, 2011, 94(2):118-123.

- 2010 Lang, J.M., Hamilton, J.P., Diaz, M.G.Q., Sluys, M.A.V., Burgos, M.R.G., Vera Cruz, C.M., Robin Buell, C., Tisserat, N.A., & Leach, J.E., Genomics-based diagnostic marker development for *Xanthomonas oryzae* pv. *oryzae* and *X. oryzae* pv. *oryzicola*. *Plant Disease*, 2010, 94(3):311-319.
- 2009 Bruce, M., Hess, A., Bai, J., Mauleon, R., Diaz, M.G., Sugiyama, N., Bordeos, A., Wang, G.L., Leung, H., & Leach, J.E., Detection of genomic deletions in rice using oligonucleotide microarrays. *BMC Genomics*, 2009, 10(129).
- 2008 Mendioro, M.S., Diaz, M.G.Q., Velasco, V.M.E., Alcaraz, M.C., Lalamunan, R.C., Amoloza, K.G., & Villamael, L.N., Genetic characterization of pili (*Canarium ovatum* Engl.) from Albay, Camarines Norte and Camarines Sur through isozyme analysis. *Philippine Journal of Science*, 2008, 137(2):115-125.
- 2007 Diaz, M.G.Q., Ryba, M., Nelson, R., Leung, H., & Leach, J.E., Detection of deletion mutants in rice via overgo hybridization onto nylon membrane spotted array. *Plant Molecular Biology Reporter*, 2007, 25(1-2):17-26.
- Leach, J.E., Davidson, R., Liu, B., Manosalva, P., Mauleon, R., Carrillo, G., Bruce, M., Stephens, J., Diaz, M.G., Nelson, R., Vera Cruz, C., & Leung, H., Understanding broad-spectrum durable resistance in rice. *Rice Genetics V*, 2007:191-207.
- 2005 Mendioro, M.S., Diaz, M.G.Q., Alcantara, M.T.B., Hilario, O.J., Mateo, P., & Maghirang, R.M., Cytological studies of selected medicinal plants: euphorbia pulcherrima wild. *Philippine Journal of Science*, 2005.
- Diaz, M.G.Q., Revilla, M.J.R., Mendoza, E.M.T., Ramirez, D.A., Identification and characterization of cDNA encoding the enolase gene from coconut (*Cocos nucifera* L.) endosperm. *The Philippine Agricultural Scientist*, 2005, 88(3):366-372.
- Nas, T.M.S., Sanchez, D.L., Diaz, M.G.Q., Mendioro, M.S., & Virmani, S.S., Pyramiding of thermosensitive genetic male sterility (TGMS) genes and identification of a candidate tms5 gene in rice. *Euphytica*, 2005, 145:67-75.
- 1994 Diaz, M.G.Q., & Ramirez, D.A., Cytogenetics of sponge gourd, *Luffa cylindrica*, ridged gourd, *Luffa acutangula*, their F1 hybrid, F2 and BC1 progenies. *The Philippine Agricultural Scientist*, 1994, 77(3):347-358.
- Diaz, M.G.Q., & Ramirez, D.A., Cytogenetics of sponge gourd, *Luffa cylindrica* Roem., ridged gourd, *L. acutangula* Roxb., their F1 hybrid, F2 and BC 1 progenies. *Philippine Journal of Crop Science*, 1994, 19(suppl 1):4.
- 1989 Diaz, M.G.Q., & Engle, L.M., Locating meiotic cells in the microsporocarps of azolla. *Philippine Agriculture*, 1989, 72(3):339-346.

**Name** Jacque Lynn F. Gabayno

**Sex** Female

**Education**

Doctor of Philosophy in Physics, University of the Philippines Diliman, Diliman, Quezon City 2010

Master of Science in Applied Physics, University of the Philippines Diliman, Diliman, Quezon City 2005

Bachelor of Science in Applied Physics, University of the Philippines Diliman, Diliman, Quezon City 2002

**Fields of Specialization**

Applied Physics

Photonics

Magnetic Nanomaterials

Engineering

Materials Science

Optics

**Employment**

Faculty Member, Mapua Institute of Technology, 2012-Present

Postdoctoral Research Associate, Chung Yuan Christian University, Taiwan, 2013 September-2015 July

Senior Test and Development Engineer, Integrated Microelectronics Inc., Laguna, 2011 August-2012 February

University Research Associate, National Institute of Physics, University of the Philippines, Diliman, 2010

Instructor, National Institute of Physics, University of the Philippines, Diliman, 2010

Visiting Researcher, Institute of Laser Engineering, Osaka University, Japan, 2008 December-2009 October

Instructor, National Institute of Physics, University of the Philippines, Diliman, 2006-2008

University Research Associate, National Institute of Physics, University of the Philippines, Diliman, 2005

Instructor, National Institute of Physics, University of the Philippines, Diliman, 2002-2004

**Association Membership**

Member, National Research Council of the Philippines



## Researches

### Completed

Detection of femtosecond and picosecond optical signals

Femtosecond pulse propagation in photonic crystal fiber

Nanosecond pulse propagation in optical fiber

### Papers Presented

2018 February 15 Cadatal-Raduban, M., Pham, M.H., Gabayno, J.L., Yamanoi, K., Empizo, M.J.F., Shimizu, T., Sarukura, N., Nguyen, H.D., Yoshikawa, A., & Fukuda, T. (2018 February 15). Optimized Ce: LiCAF amplifier pumping configurations, SPIE LASE, San Francisco, California, U.S.A.

2010 October 26-29 de Vero, J.C., Gabayno, J.F., Vitug, J.R., Sarmago, R.V., & Garcia, W.O. (2010 October 26-29). Time-resolved optical emission analysis and growth of  $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$  thin films, European Optical Society Annual Meeting, Paris, France.

2004 October 25 Gabayan, J.L.F. (2004 October 25). Femto second pulse propagation in a highly nonlinear photonic crystal fiber, Proceedings of the Samahang Pisika ng Pilipinas, Tagbilaran Bohol.

2004 October 25 Gabayno, J.L.F. (2004 October 25). Broadband continuum generation in single-mode optical fiber, 22nd SPP Physics Congress, Bohol Tropics Resort, Tagbilaran, Bohol.

### Publications

2018 Cadatal-Raduban, M., Pham, M.H., Gabayno, J.L., Yamanoi, K., Empizo, M.J.F., Shimizu, T., Sarukura, N., Nguyen, H.D., Yoshikawa, A., & Fukuda, T., Optimized Ce:LiCAF amplifier pumping configurations. Proc. SPIE 10511, Solid State Lasers XXVII: Technology and Devices, 1051126, 2018: doi: 10.1117/12.2289520.

Yamanoi, K., Hori, T., Minami, Y., Empizo, M.J.F., Luong, M.V., Shiro, A., Watanabe, J., Iwano, K., Iwasa, Y., Cadatal-Raduban, M., Gabayno, J.L., Shimizu, T., Sarukura, N., & Norimatsu, T., Investigation of holmium-doped zirconium oxide ceramic phosphor as an ultraviolet wavelength-discriminating laser beam viewer. *Optical Materials*, 2018, 75:347-349.

Ye, R., Chang, M., Pan, C.-S., Chiang, C.A., & Gabayno, J.L., High-resolution optical inspection system for fast detection and classification of surface defects. *International Journal of Optomechatronics*, 2018, 12(1):1-10.

2017 Chang, M., Lin, Y.-H., Gabayno, J.L., Li, Q., & Liu, X., Thrombolysis based on magnetically-controlled surface-functionalized  $\text{Fe}_3\text{O}_4$  nanoparticle. *Bioengineered*, 2017, 8(1):29-35.

Chang, M., Gabayno, J.L.F., Ye, R., Huang, K.-W., & Chang, Y.-J., Mixing efficiency enhancing in micromixer by controlled magnetic stirring of  $\text{Fe}_3\text{O}_4$  nanomaterial. *Microsystem Technologies*, 2017, 23(2):457-463.

Chen, P.-C., Chang, M., Gabayno, J.L., Wang, X., & Liu, X., High resolution topography utilizing a line scan stereo vision technique. *Microsystem Technologies*, 2017, 23(6):1653-1659.

- 2016 Chen, P.-C., Chang, M., Lai, W.-C., & Gabayno, J.L., Bond line thickness and die tilt inspection in die bonding process. *Journal of the Chinese Institute of Engineers*, 2016, 39(4):508-512.  
Chang, M., Chen, B.-C., Gabayno, J.L., & Chen, M.-F., Development of an optical inspection platform for surface defect detection in touch panel glass. *International Journal of Optomechatronics*, 2016, 10(2):63-72.
- 2015 Gabayno, J.L.F., Liu, D.-W., Chang, M., & Lin, Y.-H., Controlled manipulation of Fe<sub>3</sub>O<sub>4</sub> nanoparticles in an oscillating magnetic field for fast ablation of microchannel occlusion. *Nanoscale*, 2015, 7(9):3947-3953.  
Zhao, H., Chang, M., Gabayno, J.L., Liu, X., & Lin, W.S., Automated Electrical Measurements of Single ZnO Nanowire with Cu and Au Electrodes Under Axial Strain. *Science of Advanced Materials*, 2015, 7(2):287-294.  
Chang, M., Chang, M.-Y., Lin, W.-S., & Gabayno, J.L., Magnetic Control of Fe<sub>3</sub>O<sub>4</sub> Nanomaterial for Fat Ablation in Microchannel. *Materials*, 2015, 8(11):7813-7820.  
Chang, M., Gabayno, J.L., Chang, M.Y., Lin, Y.H., & Huang, K.W., Magnetic field-driven manipulation system and its applications in micromixing and microablation. *Applied Mechanics and Materials*, 2015, 736:152-157.
- 2014 Zhao, H., Chang, M., Liu, X., Gabayno, J.L., & Chen, H.T., Design and implementation of shape memory alloy-actuated nanotweezers for nanoassembly. *Journal of Micromechanics and Microengineering*, 2014, 24(9):095012.  
Chang, M., Chou, Y.C., Lin, P.T., & Gabayno, J.L., Fast and high-resolution optical inspection system for in-line detection and labeling of surface defects. *Computer, Materials, & Continua*, 2014, 42(2):125-140.
- 2011 Kouno, M., Gabayno, J.L., Cadatal-Raduban, Pham, M., Yamanoi, K., Estacio, E., Garcia, W., Nakazato, T., Shimizu, T., Sarukura, N., Suyama, T., Fukuda, K., Jin Kim, K., Yoshikawa, A., & Saito, F., Micro-pulling-down-method-grown Ce: LiCAF crystal for side-pumped laser amplifier. *Journal of Crystal Growth*, 2011, 318(1):737-740.
- 2010 De Vero, J.C., Gabayno, J.L.F., Garcia, W.O., & Sarmago, R.V., Growth evolution of Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8+δ</sub> thin films deposited by infrared (1064 nm) pulsed laser deposition. *Physica C: Superconductivity and its applications*, 2010, 470(2):149-154.  
Takatori, S., Minh, P.H., Estacio, E., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Bailon-Somintac, M., Somintac, A., Defensor, M., Gabayno, J., Awitan, F.C.B., Jaculbia, R.B., Garcia, A., Ponseca, C., Jr., Salvador, A., & Sarukura, N., Investigation of the terahertz emission characteristics of MBE-grown GaAs-based nanostructures. *Optical Materials*, 2010, 32(7):776-779.
- 2004 Gabayno, J.L.F., Femtosecond pulse propagation in a highly nonlinear photonic crystal fiber. *Proceedings of the Samahang Pisika ng Pilipinas and 22<sup>nd</sup> SPP Physics Congress, Tagbilaran City, Bohol, 2004, 1:5-7.*  
Gabayno, J.L.F., Broadband continuum generation in single-mode optical fiber. *Proceedings of the Samahang Pisika ng Pilipinas and 22<sup>nd</sup> SPP Physics Congress, Tagbilaran City, Bohol, 2004, 1:99.*

**Name** William SM Gruezo

**Sex** Male

**Organizational Affiliations**

Professor 12, Rm. D-206, Institute of Biological Sciences, University of the Philippines Los Baños, Laguna, Philippines

**Education**

Doctor of Philosophy in Plant Taxonomy, University of Alberta, Edmonton, Canada 1988

Master of Science in Botany, University of the Philippines Los Baños, Laguna, Philippines 1979

Bachelor of Science in Forestry, University of the Philippines Los Baños, Laguna, Philippines 1972

**Fields of Specialization**

Plant Taxonomy

Biosystematics

Quaternary Environments

Biodiversity Inventory

Biology

Botany

Agricultural Science

Horticulture

Agricultural Plant Science

Forestry

**Association Membership**

Regular Member, National Research Council of the Philippines

Chairman / Chief Editor, Asia Life Sciences, Laguna, Philippines

**Honors / Awards**

Distinguished Alumni in Environmental Conservation and Sustainable Development, UP Alumni Association 2014 June 21

International Publication Award, University of the Philippines 2013 November 27

**Trainings**

XIX International Botanical Congress, Shenzhen, China 2017 July 23

8<sup>th</sup> IAL Symposium, Helsinki, Finland 2016 August 1

## Papers Presented

- 2015 July 19-24 Yap, S.A., Bourgoïn, T., Szwedó, J., Soulier-Perkins, A., Fernando, E.S., Gruezo, W.S.M., & Pampolina, N.M. (2015 July 19-24). Planthopper-Palm relationships: The case of the Sikaianini (Hemiptera: Fulgoroidea: Derbidae), 7<sup>th</sup> European Hemiptera Congress and 9<sup>th</sup> International Workshop on Leafhoppers and Planthoppers of Economic Importance, Seggau Castle / Graz (Austria).

## Publications

- 2016 Zamora, P.M., & Gruezo, W.S.M., Two new species of *Pandanus* Parkinson (Family pandanaceae) from the Philippines. *Asia Life Sciences*, 2016, 25:639-647.
- 2015 Yap, S.A., Bourgoïn, T., Szwedó, J., Soulier-Perkins, A., Fernando, E.S., Gruezo, W.S.M., & Pampolina, N.M., Planthopper-Palm relationships: The case of the Sikaianini (Hemiptera: Fulgoroidea: Derbidae). *Proceedings of the 7<sup>th</sup> European Hemiptera Congress and 9<sup>th</sup> International Workshop on Leafhoppers and Planthoppers of Economic Importance, Seggau Castle / Graz (Austria)*, 2015.
- 2013 Almazol, A.E., Cervancia, C.R., Buot, I.E., Jr., Gruezo, W.S.M., & Pampolina, N.M., Floristic Composition and Physiognomy of Pagbilao Mangrove, Quezon Province, Philippines. *IAMURE International Journal of Ecology and Conservation*, 2013, 7(1):25-39.
- 2012 Gruezo, W.S.M., Plant diversity of a lowland dipterocarp rainforest in Samar Island, Philippines. *South African Journal of Botany*, 2012, 79:187.  
Castillo, R.R., & Gruezo, W.S.M., Plant diversity of vegetation-over-ultramafic soil in Mount Bulanjao, Palawan Island, Philippines. *South African Journal of Botany*, 2012, 79:226-227.  
Castillo, R.R., & Gruezo, W.S.M., Plant composition and diversity of forests-over-ultramafic soil in Mt. Victoria Range, Palawan Island, Philippines. *South African Journal of Botany*, 2012, 79:227.  
Almazol, A.E., Cervancia, C.R., Buot, I.E., Jr., Gruezo, W.S.M., & Pampolina, N.M., Floristic composition and physiognomy of mangrove forest in Pagbilao, Quezon, Philippines. *Transactions of the National Academy of Science and Technology*, 2012, 34(1):40.
- 2011 Corpuz-Raros, L.A., & Gruezo, W.S.M., New species and records of Oribatida and other soil-inhabiting mites (Acari) mainly from Luzon and Mindanao islands, Philippines. *Asia Life Sciences*, 2011, 20(1):37-61.
- 2010 Gonzales, J.C.T., Ocampo, P.P., & Gruezo, W.S.M., Comparative diversity of birds across habitat gradients in the Polillo Islands, Philippines. *Asia Life Sciences*, 2010, Suppl 4:1-212.  
Gruezo, W.S.M., Vegetation and flora of Naujan Lake National Park watershed zone, Mindoro Oriental Province, Philippines, III. Diversity, conservation status and functional roles. *Asia Life Sciences*, 2010, 19(2):263-314.  
Gruezo, W.S., Vegetation and flora of Naujan Lake National Park watershed zone, Mindoro Oriental Province, Philippines, II. Lower Watershed Zone. *Asia Life Sciences*, 2010, 19:71-114.
- 2009 Corpuz-Raros, L.A., & Gruezo, W.S.M., Three new species of *Phyllhermannia* Berlese 1916 (Acari: Oribatida: Hermanniidae) from the Philippines, with

- notes on the chaetotaxy of notogaster and legs in this genus. *Asia Life Sciences*, 2009, 18(1):17-34.
- Corpuz-Raros, L.A., & Gruezo, W.S.M., New species and records of Oribatids (Acari: Oribatida) from Palawan Island, Philippines with a note on *Acrotocepheus duplicornutus* (Aoki) from Bangladesh. *Asia Life Sciences*, 2009, 18(2):177-194.
- Gruezo, W.S., Vegetation and wildlife fauna of the Emerald Bay coast, Zambales Province, Philippines. *Asia Life Sciences*, 2009, 18:155-175.
- Pabroa, P.C.B., Quirit, L.L., Hernandez, K.N., Balanay, L.S., & Gruezo, W.S.M., Lichen Pyxine cocoas (Sw.) Nyl. (Physciaceae) as a potential biomonitor for atmospheric pollution in Southern Luzon, Philippines. *Asia Life Sciences*, 2009, 18(2):215-230.
- Gruezo, W.S.M., Vegetation and flora of Naujan Lake National Park watershed zone, Mindoro Oriental Province, Philippines, I. Upper Watershed Zone. *Asia Life Sciences*, 2009, 18(2):281-315.
- 2008 Magcale-Macandog, D.B., Barrion-Dupo, A.L., Gruezo, W.S.M., Paller, V.G., Edrial, J., Banaay, C.G.B., Dionisio-Sese, M., & Mendiolo, M., Eliciting factors affecting fish kill events in Taal Lake through participatory approaches: A tool for the development of a predictive fish kill model. *Asia Life Sciences*, 2008, 3:1-52.
- Gruezo, W.S.M., Flora and vegetation of Mankayan, Benguet Province, Philippines I. Teneb-Lapangan Ridge complex and Victoria Gold area. *Asia Life Sciences*, 2008, 17(1):151-177.
- Fernando, E.S., Co, L.L., Lagunzad, D.A., Gruezo, W.S.M., Barcelona, J.F., Madulid, D.A., Lapis, A.B., Texon, G.I., Manila, A.C., & Zamora, P.M., Threatened plants of the Philippines: A preliminary assessment. *Asia Life Sciences*, 2008, Suppl 3:1-52.
- Corpuz-Raros, L.A., & Gruezo, W.S.M., A revision of the genus *Basiceremaeus* Corpuz-Raros 1979 (Acari:Oribatida:Otocepheidae) including the description of a new species from Bangladesh. *Asia Life Sciences*, 2008, 17(2):179-187.
- Gruezo, W.S.M., Flora and vegetation of Mankayan, Benguet Province, Philippines II. Tailings Dams 3, 4 and 5. *Asia Life Sciences*, 2008, 17(2):349-389.
- 2007 Gruezo, W.S.M., & Lerom, R.R., Conservation status of Philippine Biota 5. Arenga ambong Beccari - an immediately endangered endemic palm species (Arecaceae/Palmae). *Asia Life Sciences*, 2007, 16(2):237-254.
- Corpuz-Raros, L.A., & Gruezo, W.S.M., Two new species of predatory mites of the family Cunaxidae (Acari) from Java, Indonesia. *Asia Life Sciences*, 2007, 16(2):175-181.
- Gruezo, W.S.M., Revision of the lichen genus *Lobaria* (Schreb.) Hoffm. in the Philippines. III. Subgenus *Ricasolia* (DeNot.) Gruezo comb. et stat. nov. *Asia Life Sciences*, 2007, 16(1):1-18.
- 2006 Niedbala, W., Corpuz-Raros, L.A., & Gruezo, W.S.M., Ptyctimous mites mainly from Samar island of the Philippines (Acari: Oribatida). *Genus*, 2006, 17(3):449-470.
- Gruezo, W.S.M., Revision of the lichen genus *Lobaria* (Schreb.) Hoffm. in the Philippines. I. Subgenus *Lobaria* Section *Lecanolobarina* Vain. *Asia Life Sciences*, 2006, 15(1):1-46.

- Gruezo, W.S.M., Revision of the lichen genus *Lobaria* (Schreb.) Hoffm. in the Philippines. II. Subgenus *Lobaria* Section *Lobaria*. *Asia Life Sciences*, 2006, 15(2):107-172.
- 2005 Corpuz-Raros, L.A., & Gruezo, W.S.M., The functional relationships between plant and animal indicator species from Mount Makiling, Luzon. *Asia Life Sciences*, 2005, 14(2):191-206.
- Corpuz-Raros, L., & Gruezo, W.S.M., Preliminary list of soil mites (Acari) from the Samar Island National Park, Philippines with descriptions of a new species and a new record of Oribatida. *Asia Life Sciences*, 2005, 14(2):191-206.
- Gruezo, W.S.M., Numerical analyses of *Arnica* L. subgenus *Chamissonis* Maguire (Asteraceae: Senecioneae) using TAXMAP and CLUSTAN methods. *Asia Life Sciences*, 2005, 14(1):1-22.
- 2004 Gruezo, W.S.M., & Amoroso, V.B., Conservation Status of Philippine Biota 4. *Salacca clemensiana* Becc. (Arecaceae/Palmae) - a Mindanao endemic palm with high commercial, landscape and ornamental value. *Asia Life Sciences*, 2004, 13(1&2):81-98.
- 2002 Gruezo, W.S.M., Conservation Status of Philippine Biota 3. *Medinilla dolichophylla* Merr. (Family Melastomataceae) - a rare, endemic plant species with ornamental value. *Asia Life Sciences*, 2002, 11(2):127-134.
- 2000 Gruezo, W.S., & Zamora, P.M., Conservation Status of Philippine Biota 2. *Sararanga philippinensis* Merr., Family Pandanaceae. *Asia Life Sciences*, 2000, 9(2):189-204.
- 1999 Gruezo, W.S.M., Of Philippine plants and places: an ethnobiological memoir. *Asia Life Sciences*, 1999, 8(1):15-56.
- 1998 Gruezo, W.S., Species alpha diversity of Pagbilao Grande Island vegetations, Quezon Province, Philippines. *Asia Life Sciences*, 1998, 7:39-92.
- 1997 Gonzalez, J.C.T., & Gruezo, W.S.M., The functional relationships between plant and animal indicator species from Mount Makiling, Luzon. In: Dove, M.R., & Sajise, P.E., *Eds.* with assistance of Takeuchi, H.F., *The Conditions of Biodiversity Maintenance in Asia - The Policy Linkages Between Environmental Conservation and Sustainable Development*, 1997.
- Gruezo, W.S., Floral Diversity Profile of Mount Makiling Forest Reserve, Luzon, Philippines. In: Dove, M.R., & Sajise, P.E., *Eds.* with assistance of Takeuchi, H.F., *The Conditions of Biodiversity Maintenance in Asia - The Policy Linkages Between Environmental Conservation and Sustainable Development*, 1997:153-175.
- 1996 Gruezo, W.S., & Badayos, R.B., Vegetation of Mt. Labo and vicinity, Camarines Norte Province (Luzon, Philippines). *Asia Life Sciences*, 1996, 5:63-106.
- 1995 Gruezo, W.S.M., & Denford, K.W., Foliar flavonoid variation in *Arnica* L. subgenus *Chamissonis* Maguire (Asteraceae) in western North America. *Asia Life Sciences*, 1995, 4(2):151-170.
- Gruezo, W.S.M., & Denford, K.W., Cytogeographical investigation of *Arnica* L. subgenus *Chamissonis* Maguire (Asteraceae) in western North America. *Asia Life Sciences*, 1995, 4(1):95-124.
- 1994 Gruezo, W.S.M., & Denford, K.E., Taxonomy of *Arnica* L. subgenus

- Chamissonis Maguire (Asteraceae). *Asia Life Sciences*, 1994, 3(2):89-212.
- Czecsuga, B., Lim, G., Koon Tan, T., Streimann, H., Jenie, U.A., & Gruezo, W.S.M., Carotenoids in certain species of lichen from tropical region. *Feddes Repertorium*, 1994, 105(1-2):89-96.
- Tan, B.C., Gruezo, W.S.M., & Duffield, S., *Musci Philippinensis Exsiccati: Fascicle 4 (Palawan Mosses)*. *Asia Life Sciences*, 1994, 3(1):21-24.
- 1992 Gruezo, W.S.M., Conservation status of Philippine Biota. 1. *Dawsonia longifolia* (Bruch. & Schimp.) Zant. var. *superba* (Grev.) Zant., Polytrichaceae. *Asia Life Sciences*, 1992, 1(1&2):143-147.
- 1985 Gruezo, W.S., & Fernando, E.S., Notes on *Phoenix hanceana* var. *philippinensis* in the Batanes Islands, Philippines. *Principes*, 1985, 29(4):170-176.
- 1984 Gruezo, W.S.M., & Harries, H.C., Self-Sown, Wild-Type Coconuts in the Philippines. *Biotropica*, 1984, 16(2):140-147.
- 1983 Gruezo, W.S.M., *Lobaria clemesiae* Vain. (Lobariaceae, Lichenes) in Halmahera Island. *Gardens' Bulletin Singapore*, 1983, 36:233-236.

**Name** Rafael Buan Jaculbia

**Sex** Male

**Education**

Doctor of Philosophy in Physics, University of the Philippines, Diliman, Quezon City 2016

Master of Science in Physics, University of the Philippines, Diliman, Quezon City 2011

**Fields of Specialization**

Semiconductor

Fluorescence Imaging

Optical Materials

Quantum Dots

Nanowires

Raman Scattering

Scanning Tunneling Microscopy

Terahertz Spectroscopy

Fluorescence Lifetime Imaging Microscopy

**Employment**

PostDoc Position, RIKEN - Surface and Interface Science Laboratory, Japan, 2016 February-Present

Intern, RIKEN - Center for Advanced Photonics (RAP), Japan, 2014 April-2015 March

Instructor, Condensed Matter Physics Laboratory, National Institute of Physics, University of the Philippines, 2011 June-2014 April

**Papers Presented**

2018 June 6-9 Balgos, M.H., Prieto, E.A., Jaculbia, R., Estacio, E., Salvador, A., Kim, Y. Hayazawa, N., & Somintac, A. (2018 June 6-9). Low temperature scanning tunneling microscopy and spectroscopy of undoped LT-GaAs, 36<sup>th</sup> Samahang Pisika ng Pilipinas Physics Conference and Annual Meeting, Puerto Princesa City, Philippines.

2016 August 18-21 Dasallas, L.L., Balois, M.V., Jaculbia, R., Garcia, W.O., & Hayazawa, N. (2016 August 18-21). Simulation of emission image pattern produced by CdSe/ZnS quantum dot using high NA objective lens, Proceedings of the 34<sup>th</sup> Samahang Pisika ng Pilipinas Physics Conference and Annual Meeting, University of the Philippines Visayas, Iloilo City, Philippines.

2015 June 3-6 Dasallas, L., Jaculbia, R., Balois, M.V., Garcia, W., & Hayazawa, N. (2015 June 3-6). Imaging and orientational properties of single molecule detected by a



high NA objective lens, 33<sup>rd</sup> Samahang Pisika ng Pilipinas Physics Congress, University of Northern Philippines, Vigan, Ilocos Sur, Philippines.

- 2015 June 3-6 Jaculbia, R.B., Hayazawa, N., Dasallas, L., Balois, M.V., & Kawata, S. (2015 June 3-6). Imaging and polarization properties of CdSe quantum dot at an interface detected by a high NA objective lens, 33<sup>rd</sup> Samahang Pisika ng Pilipinas Physics Congress, University of Northern Philippines, Vigan, Ilocos Sur, Philippines.
- 2011 June 26 - July 1 Balgos, M.H., Defensor, M., Jaculbia, R.B., Ibanez, J.J., Loberternos, R.A., Awitan, F.C., Tumanguil, M.A., Simon, R.C., & Salvador, A. (2011 June 26 - July 1). Time-resolved Photoluminescence Spectroscopy of Core-shell GaAs/algaas Nanowires Grown on Si(100) and Si(111) Substrates, ICMAT 2011, Suntec, Singapore.
- 2010 October Payod, R., Crosby, S., Tabacon, D., Vasquez, D.A., Awitan, F., Jaculbia, R.B., Defensor, M., Salvador, A., & Somintac, A. (2010 October). Optical and Electrical Characterization of an Interdigitated Structured Metal-Semiconductor Photodiode fabricated on n-GaAs substrate, 28<sup>th</sup> Samahan ng Pisika ng Pilipinas (SPP), MERALCO Management and Leadership Development Center (MMLDC), Antipolo City.
- 2010 July 25-30 Misa, J.V.A., Porquez, J.G., Defensor, M.J., Jaculbia, R.B., Balgos, M.H.M., Somintac, A.S., & Salvador, A.A. (2010 July 25-30). Self-Catalyzed Growth Of GaAs Nanorods On Silicon Via MBE, Physics of Semiconductors: 30<sup>th</sup> International Conference on the Physics of Semiconductors, Seoul, Korea.
- 2010 July 25-30 Ibañes, J.J., Bailon-Somintac, M., Loberternos, R., Jaculbia, R.B., Balgos, M.H., Salvador, A.A., & Somintac, A. (2010 July 25-30). Growth Of Zincblende GaAs-AlGaAs Core-Shell Nanowires on Si(111) by MBE Using AAO-Patterned Au Nanoparticle Catalyst, Physics of Semiconductors: 30<sup>th</sup> International Conference on the Physics of Semiconductors, Seoul, Korea.

## Publications

- 2018 Balgos, M.H., Prieto, E.A., Jaculbia, R., Estacio, E., Salvador, A., Kim, Y. Hayazawa, N., & Somintac, A., Low temperature scanning tunneling microscopy and spectroscopy of undoped LT-GaAs. Proceedings of the 36<sup>th</sup> Samahang Pisika ng Pilipinas Physics Conference, 2018.
- Dasallas, L.L., Jaculbia, R.B., Balois, M.V., Garcia, W.O., & Hayazawa, N., Position, orientation, and relative quantum yield ratio determination of fluorescent nanoemitters via combined laser scanning microscopy and polarization measurements. *Optical Materials Express*, 2018, 8(5):1290-1304.
- Balgos, M.H., Jaculbia, R., Prieto, E.A., Mag-usara, V.K., Tani, M., Salvador, A., Estacio, E., & Somintac, A., Surface effect of n-GaAs cap on the THz emission in LT-GaAs. *Journal of Materials Science: Materials in Electronics*, 2018, 29(14):12436-12442.
- 2017 Afalla, J., Ohta, K., Tokonami, S., Prieto, E.A., Catindig, G.A., Gonzales, K.C., Jaculbia, R., Vasquez, J.D., Somintac, A., Salvador, A., Estacio, E., Tani, M., & Tominaga, K., Charge carrier dynamics of GaAs/AlGaAs asymmetric double quantum wells at room temperature studied by optical pump terahertz probe spectroscopy. *Japanese Journal of Applied Physics*, 2017, 56(11):111203.
- Jaculbia, R.B., Afalla, J.P., Balgos, M.H., Omambac, K., Lumantas, D.A.,

- Salvador, A., Estacio, E., & Somintac, A., Tunneling at room temperature in GaAs/AlGaAs asymmetric coupled double quantum wells observed via time resolved photoluminescence spectroscopy. *Superlattices and Microstructures*, 2017, 109:324-329.
- 2016 Dasallas, L.L., Balois, M.V., Jaculbia, R., Garcia, W.O., & Hayazawa, N., Simulation of emission image pattern produced by CdSe/ZnS quantum dot using high NA objective lens. *Proceedings of the 34<sup>th</sup> Samahang Pisika ng Pilipinas Conference and Annual Meeting*, 2016.
- Jaculbia, R.B., Miwa, K., & Hayazawa, N., STM-Tip-Enhanced Raman Spectroscopy toward Single Molecule Scale. *Frontiers of Plasmon Enhanced Spectroscopy Volume 2, ACS Symposium Series*, 2016:139-181.
- 2015 Delos Santos, R., Ibañes, J.J., Balgos, M.H., Jaculbia, R., Afalla, J.P., Bailon-Somintac, M., Estacio, E., Salvador, A., Somintac, A., Que, C., Tsuzuki, S., Yamamoto, K., & Tani, M., Dynamics of Optically-Generated Carriers in Si (100) and Si (111) Substrate-Grown GaAs/AlGaAs Core-Shell Nanowires. *Nanoscale Research Letters*, 2015, 10(1):1050.
- Jaculbia, R.B., Abrenica, J.M., Estacio, E.S., Salvador, A.A., & Somintac, A.S., Terahertz emission from aluminum-doped ZnO-nGaAs heterostructure investigated using reflection-mode terahertz time-domain spectroscopy. *Applied Physics Express*, 2015, 8(12):122101.
- Dasallas, L., Jaculbia, R., Balois, M.V., Garcia, W., & Hayazawa, N., Imaging and orientational properties of single molecule detected by a high NA objective lens. *Proceedings of the 33<sup>rd</sup> Samahang Pisika ng Pilipinas Physics Congress*, 2015.
- Jaculbia, R.B., Hayazawa, N., Dasallas, L., Balois, M.V., & Kawata, S., Imaging and polarization properties of CdSe quantum dot at an interface detected by a high NA objective lens. *Proceedings of the 33<sup>rd</sup> Samahang Pisika ng Pilipinas*, 2015.
- 2014 Balgos, M.H., Jaculbia, R., Defensor, M., Afalla, J.P., Ibañes, J.J., Bailon-Somintac, M., Estacio, E., Salvador, A., & Somintac, A., Shell to core carrier-transfer in MBE-grown GaAs/AlGaAs core-shell nanowires on Si(1 0 0) substrates. *Journal of Luminescence*, 2014, 155:27-31.
- Jaculbia, R.B., Balgos, M.H.M., Mangila IV, N.S., Tumanguil, M.A.C., Estacio, E.S., Salvador, A.A., & Somintac, A.S., Enhanced terahertz emission from GaAs substrates deposited with aluminum nitride films caused by high interface electric fields. *Applied Surface Science*, 2014, 303:241-244.
- Anguluan, E., Balgos, M.H., Husay, H.A., Jaculbia, R., Estacio, E., Salvador, A., & Somintac, A., Emission of THz radiation from Cu<sub>2</sub>O obtained by thermal oxidation of Cu film on glass substrate. *Research Center for Development of Far-Infrared Region, University of Fukui*, 2014.
- 2013 Ibanes, J.J., Balgos, M.H., Jaculbia, R., Salvador, A., Somintac, A., Estacio, E., Que, C.T., Tsuzuki, S., Yamamoto, K., & Tani, M., Terahertz emission from GaAs-AlGaAs core-shell nanowires on Si(100) substrate: Effects of applied magnetic field and excitation wavelength. *Applied Physics Letters*, 2013, 102(6):063101.
- Muldera, J., Cabello, N.I., Ragasa, J.C., Mabilangan, A., Balgos, M.H., Jaculbia, R., Somintac, A., Estacio, E., & Salvador, A., Photocarrier transport and carrier recombination efficiency in vertically aligned Si nanowire arrays synthesized

- via metal-assisted chemical etching. *Applied Physics Express*, 2013, 6(8):082101.
- Omambac, K.M., Porquez, J.G., Afalla, J., Vasquez, D., Balgos, M.H.M., Jaculbia, R., Somintac, A.S., & Salvador, A.A., Application of external tensile and compressive strain on a single layer InAs/GaAs quantum dot via epitaxial lift-off. *Physica Status Solidi (B)*, 2013, 250(8):1632-1635.
- 2011 Balgos, M.H., Defensor, M., Jaculbia, R.B., Ibanez, J.J., Loberternos, R.A., Awitan, F.C., Tumanguil, M.A., Simon, R.C., & Salvador, A., Time-resolved Photoluminescence Spectroscopy of Core-shell GaAs/AlGaAs Nanowires Grown on Si(100) and Si(111) Substrates. *Proceedings of the International Conference on Materials for Advanced Technologies*, 2011.
- Bailon-Somintac, M.F., Ibanez, J.J., Jaculbia, R.B., Loberternos, R.A., Defensor, M.J., Salvador, A.A., & Somintac, A.S., Low temperature photoluminescence and Raman phonon modes of Au-catalyzed MBE-grown GaAs-AlGaAs core-shell nanowires grown on a pre-patterned Si (111) substrate. *Journal of Crystal Growth*, 2011, 314:268-273.
- Estacio, E., Takatori, S., Pham, M.H., Yoshioka, T., Nakazato, T., Cadatal-Raduban, M., Shimizu, T., Sarukura, N., Hangyo, M., Que, C.T., Tani, M., Edamura, T., Nakajima, M., Misa, J.V., Jaculbia, R., Somintac, A., & Salvador, A., Intense terahertz emission from undoped GaAs/n-type GaAs and InAs/AlSb structures grown on Si substrates in the transmission-geometry excitation. *Applied Physics B*, 2011, 103(4):825-829.
- Yoshioka, T., Takatori, S., Pham, M.H., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Estacio, E., Misa, J.V., Jaculbia, R., Defensor, M., Somintac, A., & Salvador, A., Terahertz Emission from GaAs Films on Si(100) and Si(111) Substrates Grown by Molecular Beam Epitaxy. *Journal of Infrared, Millimeter, and Terahertz Waves*, 2011, 32(4):418-425.
- Misa, J.V.A., Porquez, J.G., Defensor, M.J., Jaculbia, R.B., Balgos, M.H.M., Somintac, A.S., & Salvador, A.A., Self-Catalyzed Growth Of GaAs Nanorods On Silicon Via MBE. *AIP Conference Proceedings*, 2011, 1399(1):231-232.
- Ibañes, J.J., Bailon-Somintac, M., Loberternos, R., Jaculbia, R.B., Balgos, M.H., Salvador, A.A., & Somintac, A., Growth Of Zincblende GaAs-AlGaAs Core-Shell Nanowires on Si(111) by MBE Using AAO-Patterned Au Nanoparticle Catalyst. *AIP Conference Proceedings*, 2011, 1399(1):255-256.
- Estacio, E., Que, C.T., Yamamoto, K., Tani, M., Takatori, S., Pham, M.H., Yoshioka, T., Cadatal-Raduban, M., Sarukura, N., Hangyo, M., Edamura, T., Nakajima, M., Misa, J.V., Jaculbia, R., Somintac, A., & Salvador, A., Terahertz emission from GaAs and InAs thin films grown on Si substrates in the transmission-geometry optical excitation. *University Bulletin (University of Fukui, Japan)*, 2011, 12:204-212.
- 2010 Takatori, S., Minh, P.H., Estacio, E., Cadatal-Raduban, M., Nakazato, T., Shimizu, T., Bailon-Somintac, M., Somintac, A., Defensor, M., Gabayno, J., Awitan, F.C.B., Jaculbia, R.B., Garcia, A., Ponseca, C., Jr., Salvador, A., & Sarukura, N., Investigation of the terahertz emission characteristics of MBE-grown GaAs-based nanostructures. *Optical Materials*, 2010, 32(7):776-779.
- Payod, R., Crosby, S., Tabacon, D., Vasquez, D.A., Awitan, F., Jaculbia, R.B., Defensor, M., Salvador, A., & Somintac, A., Optical and Electrical Characterization of an Interdigitated Structured Metal-Semiconductor Photodiode fabricated on n-GaAs substrate. *Proceedings of the 28<sup>th</sup> Samahan*

ng Pisika ng Pilipinas Conference, 2010.

- 2009 Estacio, E., Pham, M.H., Takatori, S., Catadal-Raduban, M., Nakazato, T., Shimizu, T., Sarukura, N., Somintac, A., Defensor, M., Awitan, F.C.B., Jaculbia, R.B., Salvador, A., & Garcia, A., Strong enhancement of terahertz emission from GaAs in InAs/GaAs quantum dot structures. *Applied Physics Letters*, 2009, 94(23):232104.
- 2008 Mateo, C.M.N., Ibañez, J.J., Fernando, J.G., Garcia, J.C., Omambac, K., Jaculbia, R.B., Defensor, M., & Salvador, A.A., Transitions of epitaxially lifted-off bulk GaAs and GaAs/AlGaAs quantum well under thermal-induced compressive and tensile strain. *Journal of Applied Physics*, 2008, 104(10):103537.
- delos Santos, R.M., Ibañez, J.J.A., Fernando, J.G., Jaculbia, R.B., Presto, J.M.M., Defensor, M.J., Somintac, M.B., Concepcion, P., Salvador, A.A., & Somintac, A., Growth of Gold-assisted Gallium Arsenide Nanowires on Silicon Substrates via Molecular Beam Epitaxy. *Science Diliman*, 2008, 20(1):31-38.

**Name** Rita P. Laude

**Sex** Female

**Organizational Affiliations**

Professor Emeritus, Institute of Biological Sciences, University of the Philippines Los Baños,

**Education**

Doctor of Philosophy in Genetics, University of the Philippines Los Baños, College, Laguna 1984

Master of Science in Genetics, University of the Philippines Los Baños, College, Laguna 1976

Bachelor of Science in Botany, University of the Philippines Los Baños, College, Laguna 1970

**Fields of Specialization**

Botany

Genetics

Agriculture

**Employment**

Vice-Chancellor for Instruction, University of the Philippines Los Baños, 2005-2011

Dean of the Graduate School, University of the Philippines Los Baños, 1998-2003

Director of Institutional Linkages, University of the Philippines Los Baños, 1997-1998

Director of Instruction, University of the Philippines Los Baños, 1994-1997

Graduate School Secretary, University of the Philippines Los Baños, 1992-1994

Deputy Director, Institute of Biological Sciences, 1990-1993

**Association Membership**

Regular Member, National Research Council of the Philippines

Honorary Member, University of the Philippines Los Baños Genetics Society

Board Member, Coalition for Agriculture Modernization in the Philippines

**Honors / Awards**

Dr. Eusebio Y. Garcia, National Research Council of the Philippines 2006

Service Awardee, Institute of Biological Sciences

## Papers Presented

- 2013 Diaz, M.G.Q., Laude, R., Addo-Quaye, C., Mendiolo, M. Ocampo, E.M., & Carlson, J.E. (2013). De Novo Sequencing and Analysis of the Transcriptomes of Five Tissues of Saba Banana (*Musa balbisiana*), International Plant and Animal Genome Conference Asia, San Diego, CA.
- 2012 Laude, R.P., Cueno, M., Diaz, M.G., Mendiolo, M., Damasco, O., Laurena, A.,  
October 21- & Angeles, J.G. (2012 October 21-24). Coconut Biotechnology: Gene Discovery  
24 of Fatty Acid/Triglyceride Biosynthesis, Cocosin Promoter and Tissue Culture-Transformation In Corn As a Model System, Duke Energy Convention Center, Room 207, Level 2, ASA, CSSA, and SSSA International Annual Meetings, Cincinnati, Ohio.

## Publications

- 2017 Rodriguez, J.J.R.B., Calacal, G.C., Laude, R.P., & De Ungria, M.C.A., Non-differential DNA extraction of post-coital samples submitted as evidence for investigating sexual assault cases in the Philippines. *Philippine Science Letters*, 2017, 10(1):14-21.
- 2016 Parilla, R.B., Laude, R.P., de Guia, A.P.O., Espaldon, M.V.O., & Florece, L.M., Local Communities' Knowledge, Attitude and Perception Toward Cebu Black Shama (*Copsychus cebuensis* Steere) and its Habitat Characteristics: Implications for Conservation in Cebu Island, Philippines. *Journal of Environmental Science and Management*, 2016, 19(2):76-83.
- 2015 Rodriguez, J.J.R.B., Salvador, J.M., Calacal, G.C., Laude, R.P., & De Ungria, M.C.A., Allele frequencies of 23 Autosomal Short Tandem Repeat Loci in the Philippine Population. *Legal Medicine*, 2015, 17:295-297.
- 2014 Ardestani, G., Rogelio, D.R.O., Reyes, R.C., & Laude, R.P., Genetic diversity of two Philippine native freshwater goby species (Perciformes: Gobiidae): implications for conservation. *Aquatic Conservation Marine and Freshwater Ecosystems*, 2014, 24(5):592-600.
- Jalani, G.S.P., Laude, R.P., Diaz, M.G.Q., Medina, C.dR., & Velasco, L.R.I., Genetic diversity of natural populations of *Bactrocera occipitalis* (Bezzi) and *B. philippinensis* Drew and *Hancock* (Diptera: Tephritidae) in selected mango producing areas in the philippines using microsatellites. *Agrivita*, 2014, 36(3):217-228.
- 2013 Cueno, M.E., & Laude, R.P., A proposed regulatory mechanism of ontogenetically expressed DITAA-containing coconut transcripts. *Philippine Journal of Science*, 2013, 142(1):39-44.
- de la Cruz, R.Y., Laude, R.P., Diaz, M.G.Q., Laurena, A.C., Mendiolo, M.S., & Mendoza, E.M.T., Polymerase Chain Reaction (PCR)-Based Cloning of Partial cDNAs of Selected Genes in Normal and Mutant 'Makapuno' Endosperms of Coconut (*Cocos nucifera* L.). *Philippine Agricultural Scientist*, 2013, 96(1):7-17.
- 2011 de la Cruz, R.Y., Laude, R.P., Diaz, M.G.Q., Laurena, A.C., Mendiolo, M.S., & Mendoza, E.M.T., Gene for Actin is a Suitable Internal Reference for Relative RT-PCR-Based Expression Analysis in Normal and Mutant 'Makapuno', Endosperms of Coconut (*Cocos nucifera* L.). *Philippine Agricultural Scientist*, 2011, 94(2):118-123.
- 2010 Cueno, M.E., Laude, R.P., Mendoza, E.M.T., & Laurena, A.C., An Insight into

- the Ontogenetic Pattern Observed Among NQHVVN-Containing Transcripts Found in Varying Ages of the Coconut Endosperm. *Philippine Journal of Science*, 2010, 139(2):219-225.
- Cueno, M.E., Laude, R.P., & Laurena, A.C., Sequence analyses of the coconut enolase 3' end reveals a CACTG motif found within the 3'- untranslated region. *Philippine Journal of Science*, 2010, 139(2):227-232.
- Velasco, V.M.H., Laude, R.P., Medina, C.dR., & Velasco, L.R.I., Morphological and Isozyme Analyses of Natural Populations of *Bactrocera* spp. (Diptera: Tephritidae) from Guimaras Island and Laguna, Philippines. *Philippine Agricultural Scientist*, 2010, 93(3):358-364.
- Cueno, M.E., & Laude, R.P., Molecular characterization of free nucleic acids in coconut water. *Philippine Journal of Science*, 2010, 139(1):35-41.
- 2007 Tanqueco, R.E., Rodriguez, F.M., Laude, R.P., & Cueno, M.E., Total Free Sugars, Oil and Total Phenolics Content of Stored Coconut (*Cocos nucifera* L.) Water. *Philippine Journal of Science*, 2007, 136(2):103-108.
- 2006 Laude, R.P., Aquino, G.B., Tandang, R.N., Doydora, M.M., Santos, M.A.J., Austria, J.A., Barile, M.D., Rodriguez, J.J.R.B., & Sevilla, C.C., Genetic Diversity Based on Protein/Isozyme Analysis Among Populations of Beef Cattle (*Bos indicus*) From Selected Agroecological Zones in the Philippines. *Philippine Agricultural Scientist*, 2006, 89(3):217-226.
- Matsumoto, T., & Laude, R.P., Toward the development of biotechnology in Asia. In: *Abiotic Stress Tolerance in Plants: Toward the Improvement of Global Environment and Food*, Eds., Rai, A.K., & Takabe, T., 2006.
- 2004 Valdez, M.B., Peñalba, F.F., Laude, R.P., & Tandang, R.N., Genetic variation of native horses (*Equus caballus* Linn.) in three localities of Laguna, Philippines based on protein/isozyme analysis. *Philippine Agricultural Scientist*, 2004, 87(1):9-13.
- 2003 Lapis-Gaza, H.R., Mendiolo, M.S., & Laude, R.P., Cloning and characterization of the gene encoding glyceraldehyde-3- phosphate dehydrogenase from coconut (*Cocos nucifera* L.). *Philippine Agricultural Scientist*, 2003, 86(3):233.
- 2002 Tenorio, M.L.M., Laude, R.P., & Tandang, R.N., Esterase and glucose-6-phosphate dehydrogenase isozymes at different developmental stages of the giant honeybee (*Apis dorsata* Fab.). *Philippine Agricultural Scientist*, 2002, 85(3):295-298.

**Name** Analinda Creencia Manila-Fajardo

**Sex** Female

**Organizational Affiliations**

Curator, Botanical Herbarium, Museum of Natural History, University of the Philippines Los Baños, Laguna, Philippines

**Education**

Doctor of Philosophy in Botany, University of the Philippines Los Baños, Laguna, Philippines

Master of Science in Environmental Science, University of the Philippines Los Baños, Laguna, Philippines

Bachelor of Science in Biology, University of the Philippines Los Baños, Laguna, Philippines

**Fields of Specialization**

Bees

Honeybees

Botany

Pollination Biology

Ecology

Environmental Biology

Plant Reproductive Biology

Plant Biochemistry

**Employment**

Instructor, Institute of Biological Sciences, University of the Philippines Los Baños, 2000 June-2002 May

**Honors / Awards**

International Publication Award, Office of the Vice President for Academic Affairs, University of the Philippines 2013

**Researches**

**Completed**

Project: Manwal sa Kurso ng Paglalaywan

**Papers Presented**

2016 April 7- Manila-Fajardo, A.C., & Ante, K.B. (2016 April 7-9). Pollen Biology and Pollen Gatherers of *Cananga Odorata* (Lam.) Hook. F. & Thomson at the Lower Campus of the University Of The Philippines Los Baños, Laguna, 51<sup>st</sup> BIOTA Annual National Convention and Scientific Sessions.



- 2016 April 7-9 Manila-Fajardo, A.C., Honrade, T.L.A., Maranan, F.S., Rabena, M.A.F., & Campang, J.G. (2016 April 7-9). Survive: A Game for Biodiversity and Plant Health in Agroecosystems, 51<sup>st</sup> BIOTA Annual National Convention and Scientific Sessions.
- 2014 April 3-5 Manila-Fajardo, A.C., & Lambio, I.A.F. (2014 April 3-5). Identifying Pollinators by Floral Observation, 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions.
- 2014 April 3-5 Lambio, I.A.F., Barrion-Dupo, A.L.A., Fajardo, A.M., Banaay, C.G., Maranan, F.S., Beringuela, R.T., Campang, J.G., Rabena, M.A.F., & Encinares, J.M.A. (2014 April 3-5). Eco-Minutes to Win it Game: Integrating Ecological Concepts in a Competitive Classroom Activity, 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions.
- 2014 April 3-5 Jimenez, G.C., Patriarca, M.C.L., Reyes, B.N., Villamin, M.M., Abrantes, J.F.V., & Manila-Fajardo, A.C.M. (2014 April 3-5). Pollen Spectra of *Tetragonula biroi* Friese (Order Hymenoptera, Family Apidae) In Los Baños, Laguna, 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions.
- 2013 April 4-6 Barrion-Dupo, A.L.A., Fajardo, A.M., Banaay, C.G.B., Beringuela, R.T., Lambio, I.A.F., & Maranan, F.S. (2013 April 4-6). Innovative Ways of Teaching Environmental Biology, 48<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions.
- 2013 April 4-6 Barrion-Dupo, A.L.A., Lambio, I.A.F., Maranan, F.S., Banaay, C.G.B., Beringuela, R.T., & Fajardo, A.M. (2013 April 4-6). Biodiversity Boardgame: A Tool For Teaching Environmental Biology, 48<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions.
- 2004 February 23-27 Magsaysay, J.F., Lucero, R.M., Manila-Fajardo, A.C., & Tapay, N.E. (2004 February 23-27). Economics of raising honey bees in the Philippines, 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, UPLB, Philippines.
- 2004 February 23-27 Manila-Fajardo, A.C., & Abrigo, J.O. (2004 February 23-27). Why people buy honey, 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, UPLB, Philippines.
- 2004 February 23-27 Manila-Fajardo, A.C., & Cervancia, C.R. (2004 February 23-27). Life Table of Honey Bee, *Apis mellifera* L. in Three Ecosystems in the Philippines, 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, UPLB, Philippines.
- 2004 February 23-27 Manila-Fajardo, A.C., & Cervancia, C.R. (2004 February 23-27). Wild plants as food resources for bees, 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, UPLB, Philippines.
- 2004 February 23-27 Manila-Fajardo, A.C., Fajardo, A.C., Jr., & Cervancia, C.R. (2004 February 23-27). Pollen sources of of *Apis dorsata* F. in Mt. Makiling, Luzon Island Philippines, 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, UPLB, Philippines.
- 2001 Cervancia, C.R., & Manila, A.C. (2001 November). Some aspects on the Floral

- November Biology and Pollination of Calamondin, *Citrus madurensis* (Lour), 7<sup>th</sup> Beenet Conference and Technofora, Tagbilaran City, Bohol.
- 2000 March 19-25 Cervancia, C.R., & Manila, A.C. (2000 March 19-25). Some aspects on the Floral Biology and Pollination of Calamondin, *Citrus madurensis* (Lour), International Conference on Tropical Bees and Fifth Asian Apicultural Conference. Chainang Mai, Thailand.

## Publications

- 2016 Manila-Fajardo, A.C., Honrade, T.L.A., Maranan, F.S., Rabena, M.A.F., & Campang, J.G., Survive: A Game for Biodiversity and Plant Health in Agroecosystems. Proceedings of the 51<sup>st</sup> BIOTA Annual National Convention and Scientific Sessions, 2016.
- Manila-Fajardo, A.C., & Ante, K.B., Pollen Biology and Pollen Gatherers of *Cananga Odorata* (Lam.) Hook. F. & Thomson at the Lower Campus of the University of the Philippines Los Baños, Laguna. Proceedings of the 51<sup>st</sup> BIOTA Annual National Convention and Scientific Sessions, 2016.
- Cumbao, J.L.T., Alvarez, P.L.J., Belina-Aldemita, M.D., Micor, J.R.L., Angelia, M.R.N., Manila-Fajardo, A.C., & Cervancia, C.R., Total Phenolics, Total Flavonoids, Antioxidant Activity and Antibacterial Property of Propolis Produced by the Stingless Bee, *Tetragonula Biroi* (Friese), from Laguna and Quezon, Philippines. Philippine Entomologist, 2016, 30(1):63-74.
- 2015 Recario, R.N.C., Encinas, J.E.I., Barro, J.C.M., Villate, J.D.G., Jacildo, A.J., Baladad, J.S., Fajardo, Jr., A.C., Pabico, J.P., Manila-Fajardo, A.C., & Cervancia, C.R., POLLIMAC II: A Modular Automated Pollen Image Classifier. Journal of Nature Studies, 2015, 14(1):22-35.
- 2014 Manila-Fajardo, A.C., & Lambio, I.A.F., Identifying Pollinators by Floral Observation. Proceedings of the 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, 2014.
- Lambio, I.A.F., Barrion-Dupo, A.L.A., Fajardo, A.M., Banaay, C.G., Maranan, F.S., Beringuela, R.T., Campang, J.G., Rabena, M.A.F., & Encinares, J.M.A., Eco-Minutes to Win it Game: Integrating Ecological Concepts in a Competitive Classroom Activity. Proceedings of the 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, 2014.
- Jimenez, G.C., Patriarca, M.C.L., Reyes, B.N., Villamin, M.M., Abrantes, J.F.V., & Manila-Fajardo, A.C.M., Pollen Spectra of *Tetragonula biroi* Friese (Order Hymenoptera, Family Apidae) In Los Baños, Laguna. Proceedings of the 49<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, 2014.
- 2013 Barrion-Dupo, A.L.A., Fajardo, A.M., Banaay, C.G.B., Beringuela, R.T., Lambio, I.A.F., & Maranan, F.S., Innovative Ways of Teaching Environmental Biology. Proceedings of the 48<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, 2013.
- Barrion-Dupo, A.L.A., Lambio, I.A.F., Maranan, F.S., Banaay, C.G.B., Beringuela, R.T., & Fajardo, A.M., Biodiversity Boardgame: A Tool For Teaching Environmental Biology. Proceedings of the 48<sup>th</sup> BIOTA Annual National Convention and Scientific Sessions, 2013.
- Barrion-Dupo, A.L.A., Banaay, C.G.B., Lambio, I.A.F., Maranan, F.S., Rabena, M.A.F., Flores, R.J.D., Deyto, A.C., Manila-Fajardo, A.C., & Lit, I.L., Effect of Population Density on Larval Dispersion and Pit Construction of the Antlion,

- Myrmeleon angustipennis* Banks (Neuroptera: Myrmeleontidae). Asian Journal of Biological Sciences, 2013, 6(2):131-137.
- 2012 Cervancia, C.R., Manila-Fajardo, A.C., Fajardo, A.C., Jr., & Lucero, R.M., Management of Philippine Bees: Stingless Bees and Honey Bees with Bibliography of Philippines Bees. Second Edition. Laguna: UPLB, 2012:71 pp.  
Cunanan-Deyto, R.A., Manila-Fajardo, A.C., & Cervancia, C.R., Pollen contents of *Apis mellifera* Linn. Honey from Davao City, Philippines. Journal of Nature Studies, 2012, 11(1&2):96-102.
- 2011 See, M.A.D., Dorado, S.L., Manila-Fajardo, A.C., Fajardo, A.C., Jr., & Cervancia, C.R., Physico-chemical characteristics of commercial honey in select supermarkets in Metro Manila, Philippines. The Philippine Entomologist, 2011, 25(2):187-198.  
De Guzman, Z., Cervancia, C.R., Dimasuay, K.G.B., Tolentino, M.M., Abrera, G.B., Cobar, M.L.C., Fajardo, A.C., Jr., Sabino, N.G., Manila-Fajardo, A.C., & Feliciano, C.P., Radiation inactivation of *Paenibacillus* larvae and sterilization of American Foul Brood (AFB) infected hives using Co-60 gamma rays. Applied Radiation and Isotopes, 2011, 69(10):1374-1379.  
See, M.A.D., Manila-Fajardo, A.C., Fajardo, A.C., Jr., & Cervancia, C.R., Physico-Chemical Properties of Philippine Honey and Their Implication in the Establishment of Standard for Tropical Honeys. Journal of Apiculture, 2011, 26(1):45-48.  
Cervancia, C.R., & Manila-Fajardo, A.C., Beekeeping Management for Food Safety in Hive Products in the Philippines. Journal for Nature Studies, 2011, 10(1):69-72.
- 2010 Manila-Fajardo, A.C., & Gonzales, A.K.B.M., Pollen Sources of *Apis dorsata* Fabr. in the Mainland Palawan, Philippines. Philippine Entomologist, 2010, 24(2):137-149.
- 2009 Cervancia, C.R., Lucero, R.M., Manila-Fajardo, A.C., & Fajardo, A.C., Jr., Management of Native Bees: *Trigona* spp., *Apis cerana*, *Apis dorsata*. Laguna: UPLB, 2009:73 pp.
- 2004 Magsaysay, J.F., Lucero, R.M., Manila-Fajardo, A.C., & Tapay, N.E., Economics of raising honey bees in the Philippines. Bees for New Asia. Proceedings of the 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, 2004:305-310.  
Manila-Fajardo, A.C., & Abrigo, J.O., Why people buy honey. Bees for New Asia. Proceedings of the 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, 2004:301-305.  
Manila-Fajardo, A.C., & Cervancia, C.R., Life Table of Honey Bee, *Apis mellifera* L. in Three Ecosystems in the Philippines. Bees for New Asia. Proceedings of the 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, 2004:165-168.  
Manila-Fajardo, A.C., & Cervancia, C.R., Wild plants as food resources for bees. Bees for New Asia. Proceedings of the 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, 2004:23-27.  
Manila-Fajardo, A.C., Fajardo, A.C., Jr., & Cervancia, C.R., Pollen sources of *Apis dorsata* F. in Mt. Makiling, Luzon Island Philippines. Bees for New Asia. Proceedings of the 7<sup>th</sup> Asian Apicultural Conference and 10<sup>th</sup> BEENET Symposium and Technofora, 2004:63-66.

- 2003 Manila-Fajardo, A.C., & Cervancia, C.R., Performance of honey bees (*Apis mellifera* L.) in three ecosystems in Laguna, Philippines. *Philippine Agricultural Scientist*, 2003, 86(2):146-157.
- Manila-Fajardo, A.C., Cervancia, C.R., & Pitargue, F.C., Bee pollinators and floral characteristics of calamondin (x *Citrofortunella microcarpa* (Bunge) Wijnands). *Philippine Agricultural Scientist*, 2003, 86(2):131-133.
- 2000 Cervancia, C.R., & Manila, A.C., Some aspects on the Floral Biology and Pollination of Calamondin, *Citrus madurensis* (Lour).. Proceedings of the 7<sup>th</sup> International Conference on Tropical Bees and Fifth Asian Apicultural Conference. Chainang Mai, Thailand, 2000:293-294.
- Burgos, J.R.T., Manila, A.C., & Cervancia, C.R., Honeys of Three Bee Species in Guinobatan, Albay. Proceedings of the 7<sup>th</sup> International Conference on Tropical Bees and Fifth Asian Apicultural Conference. Chainang Mai, Thailand, 2000:153-155.

**Name** Ma Cristina A. Paule-Mercado

**Sex** Female

**Fields of Specialization**

Environmental engineering

Wastewater treatment

Nonpoint source pollution

Water quality modeling

Microbiology

**Publications**

- 2017 Paule-Mercado, M.A., Lee, B.Y., Memon, S.A., Umer, S.R., Salim, I., & Lee, C.-H., Influence of land development on stormwater runoff from a mixed land use and land cover catchment. *Science of The Total Environment*, 2017, 599-600:2142-2155.
- Paule-Mercado, M.C.A., & Lee, C.-H., Calibration of the SWMM for a mixed land use and land cover catchment in Yongin, South Korea. *Desalination and Water Treatment*, 2017, 63:381-388.
- Memon, S., Paule, M.C., Yoo, S., Umer, R., Lee, B.-Y., Sukhbaatar, C., & Lee, C.-H., Trend of storm water runoff pollutants temporal variability from different land use sites in Korea. *Desalination and Water Treatment*, 2017, 63:433-441.
- Paule-Mercado, M.A., Lee, B.-Y., Memon, S.A., Umer, S.R., Salim, I., & Lee, C.-H., Influence of land development on stormwater runoff from a mixed land use and land cover catchment. *Science of The Total Environment*, 2017, 599-600:2142-2155.
- 2016 Paule-Mercado, M.A., Lee, B.-Y., Sukhbaatar, C., Umer, R., Saleem, I., Yu, S.-H., & Lee, C.-H., Using PCSWMM to Predict the Hydrological Response to Land Use and Land Cover Change Development in a Mixed Catchment. *Korea Water Environment Association (공동 춘계 학술발표회)*, 2016, 2016:31-32.
- Paule-Mercado, M.A., Ventura, J.S., Memon, S.A., Jahng, D., Kang, J.-H., & Lee, C.-H., Monitoring and predicting the fecal indicator bacteria concentrations from agricultural, mixed land use and urban stormwater runoff. *Science of the Total Environment*, 2016, 550:1171-1181.
- 2015 Paule, M.A., Memon, S.A., Hul, H.G., & Lee, C.-H., *Escherichia coli* contamination: association to stormwater quality and land use and land cover development. *Korea Water Environment Association (공동 춘계 학술발표회)*, 2015, 2015(1):130-131.
- Alfonso, L.S.K., Madarang, K.J., Lee, M.Y., Lee, D.H., Paule, M.C.A., Lee, C.-H., & Kang, J.-H., Wet weather discharge characteristics of phosphorus and management implications in a mixed land-use watershed. *Desalination and Water Treatment*, 2015, 53(11):3054-3065.
- Sajjad, R.U., Kim, K.J., Memon, S., Sukhbaatar, C., Paule, M.C., Lee, B.-Y., &

- Lee, C.-H., Characterization of Stormwater Runoff from a Light Rail Transit Area. *Water Environment Research*, 2015, 87(9):813-882.
- Memon, S., Paule, M.C., Lee, B.-Y., Umer, R., Sukhbaatar, C., Lee, C.-H., Investigation of turbidity and suspended solids behavior in storm water runoff from different land-use sites in South Korea. *Desalination and Water Treatment*, 2015, 53(11):3088-3095.
- Paule, M.C.A., Ventura, J.-R. S., Memon, S., Lee, B.-Y., Jahng, D., Kang, M.-J., & Lee, C.-H., Fecal contamination in Yongin watershed: association to land use and land cover and stormwater quality. *Desalination and Water Treatment*, 2015, 53(11):3026-3038.
- 2014 Paule, M.C.A., Memon, S., Lee, B.-Y., Raja, U.S., & Sukhbaatar, C., Statistical Evaluation of Intra-event Variability of Fecal Indicator in Stormwater Runoff from Different Land uses. *International Congress on Environmental Modelling and Software*, 2014:540-547.
- Paule, M.A., Memon, S.A., Lee, B.-Y., Umer, S.R., & Lee, C.-H., Stormwater runoff quality in correlation to land use and land cover development in Yongin, South Korea. *Water Science & Technology*, 2014, 70(2):218-225.
- 2013 Memon, S., Paule, M.C., Park, S.-J., Lee, B.-Y., Kang, S., Umer, R., & Lee, C.-H., Monitoring of land use change impact on stormwater runoff and pollutant loading estimation in Yongin watershed Korea. *Desalination and Water Treatment*, 2013, 51(19-21):4088-4096.
- 2012 Lee, B.-Y., Park, S.-J., Paule, M., Jun, W., Lee, C.-H., Effects of impervious cover on the surface water quality and aquatic ecosystem of the Kyeongan stream in South Korea. *Water Environment Federation*, 2012, 84(8):635-645.
- Paule, M.A., Memon, S.A., Park, S.-J., Lee, B.-Y., Kang, S.-H., Bulat, N., Yu, S.-H., & Lee, C.-H., Comparison of Storm Water Pollutant Loading in Construction Site and Urban Area. *2012 Joint Conference Proceedings. Korea Water Environment Association. Korean Water and Wastewater Society*, 2012.
- 2010 Paule, M.C., Cuerdo, J.G., Reyes, M.A., Rala, A., van Etten, J., Nelson, A., & Hijmans, R.J., Mapping genebank collections. *Rice Today*, 2010, 9(2):30-31.

**Name** Michael Francis Ian Guerra Vega II

**Sex** Male

**Organizational Affiliations**

Associate Professor 1, National Institute of Physics, University of the Philippines Diliman, Diliman, Quezon City

**Education**

Doctor of Philosophy in Physics, University of Florida, Gainesville, FL 32611, U.S.A. 2009

Bachelor of Science in Physics (Honorable Mention), Ateneo de Manila University, Loyola Heights, Quezon City 2001

Class valedictorian, Xavier University High School, Cagayan de Oro, Misamis Oriental, Philippines 1997

**Fields of Specialization**

Gravitational Physics

General Relativity

Relativistic Astrophysics

Mathematical Physics

Black Hole Physics

**Employment**

Associate Professor 1, National Institute of Physics, University of the Philippines, 2016-Present

Postdoctoral Research Associate, Astrophysics Sector, SISSA - International School for Advanced Studies, Italy, 2012-2015

Postdoctoral Research Fellow, University of Guelph, Canada, 2009-2012

**Honors / Awards**

Ateneo Merit Scholar, Ateneo de Manila University

DOST Merit Scholar, Department of Science and Technology

Balik-PhD grant, Office of the Vice President for Academic Affairs, University of the Philippines Diliman

**Papers Presented**

2014 March Diener, P., Vega, I., & Wardell, B. (2014 March). A smoother effective source for scalar self-force simulations, APS April Meeting, U.S.A.

2012 March 31 - April 3 Diener, P., Vega, I., Wardell, B., & Detweiler, S. (2012 March 31 - April 3). Self-consistent waveforms from a scalar charge in orbit around a Schwarzschild black hole, APS April Meeting, U.S.A.

- 2012 March 31 - April 3 Vega, I., Diener, P., Wardell, B., & Detweiler, S. (2012 March 31 - April 3). Self-forced motion of a scalar particle around a Schwarzschild black hole, APS April Meeting, U.S.A.
- 2011 April 30 - May 3 Zimmerman, P., Vega, I., & Poisson, E. (2011 April 30 - May 3). Electromagnetic self-force as a cosmic censor, APS April Meeting, U.S.A.
- 2010 February 13-16 Vega, I., Diener, P., Tichy, W., & Detweiler, S. (2010 February 13-16). Self-force with numerical relativity tools, APS April Meeting, U.S.A.
- 2009 May 2-9 Detweiler, S., & Vega, I. (2009 May 2-9). A self-force primer for numerical relativists, APS April Meeting, U.S.A.
- 2007 April 14-17 Vega, I. (2007 April 14-17). Motion of a scalar charge around a Schwarzschild black hole, APS April Meeting, U.S.A.

### Publications

- 2018 Castillo, J., Vega, I., & Wardell, B., Self-force on a scalar charge in a circular orbit about a Reissner-Nordström black hole. *General Relativity and Quantum Cosmology*. Cornell University Library, 2018:arXiv:1804.09224.
- 2017 Revelar, K.S., & Vega, I., Overcharging higher-dimensional black holes with point particles. *Physical Review D*, 2017, 96(6):064010.
- 2016 Barausse, E., Sotiriou, T.P., & Vega, I., Slowly rotating black holes in Einstein-æther theory. *Physical Review D*, 2016, 93(4):044044.
- 2014 Sotiriou, T.P., Vega, I., & Vernieri, D., Rotating black holes in three-dimensional Horava gravity. *Physical Review D*, 2014, 90(4):044046.  
Diener, P., Vega, I., & Wardell, B., A smoother effective source for scalar self-force simulations. *American Physica Society Meeting Abstracts*, 2014.
- 2013 Zimmerman, P., Vega, I., Poisson, E., & Haas, R., Self-force as a cosmic censor. *Physical Review D*, 2013, 87(4):041501(R).  
Kuchar, J., Poisson, E., & Vega, I., Electromagnetic self-force on a static charge in Schwarzschild-de Sitter spacetimes. *Classical and Quantum Gravity*, 2013, 30(23):235033.  
Vega, I., Wardell, B., Diener, P., Cupp, S., & Haas, R., Scalar self-force for eccentric orbits around a Schwarzschild black hole. *Physical Review D*, 2013, 88(8):084021.
- 2012 Diener, P., Vega, I., Wardell, B., & Detweiler, S., Self-consistent orbital evolution of a particle around a Schwarzschild black hole. *Physical Review Letters*, 2012, 108(19):191102.  
Casals, M., Poisson, E., & Vega, I., Regularization of static self-forces. *Physical Review D*, 2012, 86(6):064033.  
Wardell, B., Vega, I., Thornburg, J., & Diener, P., Generic effective source for scalar self-force calculations. *Physical Review D*, 2012, 85(10):104044.  
Diener, P., Vega, I., Wardell, B., & Detweiler, S., Self-consistent waveforms from a scalar charge in orbit around a Schwarzschild black hole. *American Physica Society Meeting Abstracts*, 2012.  
Vega, I., Diener, P., Wardell, B., & Detweiler, S., Self-forced motion of a scalar particle around a Schwarzschild black hole. *American Physica Society Meeting Abstracts*, 2012.



- 2011 Poisson, E., Pound, A., & Vega, I., The Motion of Point Particles in Curved Spacetime. *Living Reviews in Relativity*, 2011, 14(1):7.  
 Vega, I., Wardell, B., & Diener, P., Effective source approach to self-force calculations. *Classical and Quantum Gravity*, 2011, 28(13):134010.  
 Vega, I., Poisson, E., & Massey, R., Intrinsic and extrinsic geometries of a tidally deformed black hole. *Classical and Quantum Gravity*, 2011, 28(17):175006.  
 Zimmerman, P., Vega, I., & Poisson, E., Electromagnetic self-force as a cosmic censor. *American Physica Society Meeting Abstracts*, 2011.
- 2010 Vega, I., Diener, P., Tichy, W., & Detweiler, S., Self-force with numerical relativity tools. *American Physica Society Meeting Abstracts*, 2010.
- 2009 Vega, I., Diener, P., Tichy, W., & Detweiler, S., Self-force with  $(3 + 1)$  codes: a primer for numerical relativists. *Physical Review D*, 2009, 80(8):084021.  
 Detweiler, S., & Vega, I., A self-force primer for numerical relativists. *American Physica Society Meeting Abstracts*, 2009.
- 2008 Vega, I., & Detweiler, S., Regularization of fields for self-force problems in curved spacetime: Foundations and a time-domain application. *Physical Review D*, 2008, 77(8):084008.  
 Jaranowski, P., Arun, K.G., Barack, L., Blanchet, L., Buonanno, A., De Laurentis, M.F., Detweiler, S., Dittus, H., Favata, M., Faye, G., Friedman, J.L., Ganz, K., Hikida, W., Iyer, B.R., Keidl, T.S., Kim, D.-H., Kokkotas, K.D., Kol, B., Kubeka, A.S., Lämmerzahl, C., Majár, J., Nagar, A., Nakano, H., Price, L.R., Qusailah, M.S.S., Radicella, N., Sago, N., Singh, D., Sotani, H., Tanaka, T., Tartaglia, A., Vasúte, M., Vega, I., Whiting, B.F., Wiseman, A.G., & Yoshida, S., Summary of session B3: analytic approximations, perturbation methods and their applications. *Classical and Quantum Gravity*, 2008, 25(11):114020.
- 2007 Vega, I., Motion of a scalar charge around a Schwarzschild black hole. *American Physica Society Meeting Abstracts*, 2007.

**Name** Jey-R Ventura

**Sex** Male

**Organizational Affiliations**

Assistant Professor 7, Department of Engineering Science, College of Engineering and Agro-Industrial Technology, University of the Philippines Los Baños, College, 4031 Laguna

**Education**

Doctor of Philosophy in Environmental Engineering and Biotechnology, Myongji University, South Korea 2013

Master of Science in Environmental Engineering and Biotechnology, Myongji University, South Korea 2009

Bachelor of Science in Chemical Engineering, University of the Philippines Los Baños, Laguna, Philippines 2007

**Fields of Specialization**

Chemical Engineering

Environmental Engineering and Biotechnology

Biofuels

Fermentation Engineering

Wastewater Treatment

Water Quality Monitoring

Microalgae Propagation and Biofuel Production

Anaerobic Culture

Feasibility Studies on Biofuel

Environmental Impact Assessment

Renewable Energy Technologies

Energy Engineering

Hydrology

Microbial Ecology

Biomass Conversion

Community Structure

Anaerobic Digestion

Biofuel Production

Land Use

Rainfall  
Gasification  
Bioenergy  
Lignocellulosic Conversion  
Methane Production  
Green Technology  
Ethanol Production  
Bioreactors  
Hydrolysis  
Transesterification  
Lignocellulose Degradation  
Biomass energy  
Biomass  
Hydrothermal Treatment  
Biofuels from Lignocellulosic Biomass  
Methanogens  
Nutrient Removal  
Bioethanol Fuel  
Clostridium tyrobutyricum  
Biosystems Engineering  
Bioengineering

### **Employment**

Assistant Professor, Department of Engineering Science, University of the Philippines Los Baños, 2015 March-Present

Post Doctorate, Department of Environmental Engineering and Energy, Myongji University, 2013 August-2015 August

### **Association Membership**

Associate Member, National Research Council of the Philippines

Editorial Board, Philippine e-Journal for Applied Research and Development (PeJARD)

### **Papers Presented**

2014 June 18 Paule, M.C.A., Memon, S., Lee, B.-Y., Raja, U.S., & Sukhbaatar, C. (2014 June 18). Evaluation of Intra-event Variability of Fecal Indicator in Stormwater Runoff from Different Land uses, International Congress on Environmental Modelling and Software, San Diego, California, USA.

## Publications

- 2017 Albarico, J.S., Detras, M.C.M., Sanchez, P.R.P., Alfafara, C.G., Borines, M.G., Nayve, F.R.P., Dorado, A.A., Escobar, E.C., & Ventura, J.-R.S., Yield Optimization of Reducing Sugars from Acid Hydrolysis of *Chlorella vulgaris* Waste Biomass. Philippine e-Journal for Applied Research and Development, 2017, 7:21-33.
- 2016 Paule-Mercado, M.A., Ventura, J.S., Jahng, D., Kang, J.-H., & Lee, C.-H., Monitoring and predicting the fecal indicator bacteria concentrations from agricultural, mixed land use and urban stormwater runoff. Science of The Total Environment, 2016, 550:1171-1181.
- Nam, J.-H., Ventura, J.-R.S., Yeom, I.T., Lee, Y., & Jahng, D., A novel perchlorate- and nitrate-reducing bacterium, *Azospira* sp. PMJ. Applied Microbiology and Biotechnology, 2016, 100(13):6055-6068.
- Ventura, R.L.G., Ventura, J.-R.S., & Oh, Y.-S., Investigation of the Photoheterotrophic Hydrogen Production of *Rhodobacter sphaeroides* KCTC 1434 using Volatile Fatty Acids under Argon and Nitrogen Headspace. American Journal of Environmental Sciences, 2016, 12(6):358-369.
- Nam, J.-H., Ventura, J.-R.S., Yeom, I.T., Lee, Y., & Jahng, D., Structural and Kinetic Characteristics of 1,4-Dioxane Degrading Bacterial Consortia Containing the Phylum TM7. Journal of Microbiology and Biotechnology, 2016, 26(11):1951-1964.
- Clanor, M.D.M., Escobar, E.C., Bondad, R.G.M., Duka, M.A., Ventura, J.-R.S., Dorado, A.A., Lu, M.M.D., Sanchez, P.R.P., & Mulimbayan, F.M., Daily Streamflow Forecasting of the Gauged Molawin Watershed Using Model Combinations and the Ungauged Eastern Dampalit Watershed by Spatial Proximity Regionalization. Philippine e-Journal for Applied Research and Development, 2016, 6:19-31.
- 2015 Paule, M.C.A., Ventura, J.-R.S., Memon, S., Lee, B.-Y., Jahng, D., Kang, M.-J., & Lee, C.-H., Fecal contamination in Yongin watershed: association to land use and land cover and stormwater quality. Desalination and Water Treatment, 2015, 53(11):3026-3038.
- Ventura, J.-R.S., Nam, J.-H., Yang, B., Na, R., Kil, H., Nam, D.-H., Kang, K.-H., & Jahng, D., Intracellular Concentrations of NAD(P), NAD(P)H, and ATP in a Simulated Oxidic-settling-anaerobic (OSA) Process. Journal of Korean Society on Water Environment, 2015, 31(6):599-609.
- Clanor, M.D.M., Bondad, R.G.M., Escobar, E.C., Caburnay, J.M., Ventura, J.-R.S., Dorado, A.A., Lu, M.M.D., & Glorioso, A.U., Rainfall-runoff Modeling of the Molawin Watershed of the Makiling Forest Reserve Using Five Lumped Conceptual Models. Philippine e-Journal for Applied Research and Development, 2015, 5:37-56.
- Escobar, E.C., Navarro, R.R., Nayve, F.R.P., Borines, M.G., & Ventura, J.-R.S., Copper (II) Removal from Industrial Effluent Using a Coagulation-Flocculation Process Employing *Rhizobium* Extracellular Polysaccharide. Philippine e-Journal for Applied Research and Development, 2015, 5:1-10.
- 2014 Ventura, J.-R.S., Lee, J., & Jahng, D., A comparative study on the alternating mesophilic and thermophilic two-stage anaerobic digestion of food waste. Journal of Environmental Sciences, 2014, 26(1):1274-1283.
- Paule, M.C.A., Memon, S., Lee, B.-Y., Raja, U.S., Sukhbaatar, C., Ventura, J.-

- R.S., & Jahng, D., Statistical Evaluation of Intra-event Variability of Fecal Indicator in Stormwater Runoff from Different Land uses. In: Ames, D.P., Quinn, N.W.T., Rizzoli, A.E., Eds., Proceedings of the 7<sup>th</sup> International Congress on Environmental Modelling and Software, 2014, 1:540-547.
- 2013 Ventura, J.-R.S., Yang, B., Lee, Y.-W., Lee, K., & Jahng, D., Life cycle analyses of CO<sub>2</sub>, energy, and cost for four different routes of microalgal bioenergy conversion. *Bioresource Technology*, 2013, 137:302-310.
- Ventura, J.-R.S., Hu, H., & Jahng, D., Enhanced butanol production in *Clostridium acetobutylicum* ATCC 824 by double overexpression of 6-phosphofructokinase and pyruvate kinase genes. *Applied Microbiology and Biotechnology*, 2013, 97(16):7505-7516.
- Ventura, J.-R.S., & Jahng, D., Improvement of Butanol Fermentation by Supplementation of Butyric Acid Produced from a Brown Alga. *Biotechnology and Bioprocess Engineering*, 2013, 18(6):1142-1150.
- Na, R., Kil, H., Ventura, J.-R., & Jahng, D., Harvesting Microalgal Biomass Using Flat-sheet and Hollow Fiber Microfiltration Membrane. Korea Biological Engineering Conference, The Korean Society for Biotechnology and Bioengineering, 2013:266.
- 2012 Ventura, J.-R., & Jahng, D., Biobutanol Fermentation from the Four Species of Brown and Two Species of Red Macroalgae and the Effect of Post-treatments after the Acid Hydrolysis. Korea Biological Engineering Conference, The Korean Society for Biotechnology and Bioengineering, 2012:148.
- Jahng, D., Hu, H., & Ventura, J.-R., Double Over-expression of 6-Phosphofructokinase and Pyruvate Kinase for the Improved Butanol Production in *Clostridium acetobutylicum* ATCC 824. Korea Biological Engineering Conference, The Korean Society for Biotechnology and Bioengineering, 2012:131.
- 2011 Ventura, J.S., Seo, S., Chung, I., Yeom, I., Kim, H., & Jahng, D., Enhanced reduction of excess sludge and nutrient removal in a pilot-scale A(2)O-MBR-TAD system. *Water Science and Technology*, 2011, 63(8):1547-1556.
- Song, J.-H., Ventura, J.-R.S., Lee, C.-H., & Jahng, D., Butyric Acid Production from Brown Algae Using *Clostridium tyrobutyricum* ATCC 25755. *Biotechnology and Bioprocess Engineering*, 2011, 16(1):42-49.

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**Sex**              Female

**Education**

Hygiene and Public Health, University of the Philippines, Diliman, Quezon City 1959

Hygiene and Public Health, John Hopkins University, 615 N Wolfe St, Baltimore, MD 21205, USA 1974

Doctorat du Troisieme Cycle (Demographie), Université Paris 1, Panthéon Sorbonne, Paris, France 1981

**Fields of Specialization**

Social science

Population

Mortality

Family Planning

Reproductive Health

**Association Membership**

Vice Chair, Board of Trustees, Quezon City Council on Population

Faculty Affiliate, Center for International Studies, University of the Philippines

Secretary, Board of Trustees, Social Sciences and Philosophy Research Foundation, Inc., CSSP

Secretary, Executive Committee, Division VIII of the Social Sciences, National Research Council of the Philippines

Regular Member, National Research Council of the Philippines

Member, International Union for the Scientific Study of Population, Paris, France

Research Center Representative, UP Population Institute Committee for International Cooperation in National Research in Demography (CICRED), Paris, France

Member, Philippine Population Association

**Honors / Awards**

Distinguished Service Awards, University of the Philippines Population Institute 2004 December 17

Outstanding Alumna in Research, UP College of Public Health Alumni Society 2004 July 9

## Researches

### Completed

Unmet Need for Family Planning in the Philippines-and Its Regions in the 2003

1999 Multi-Indicator Cluster Survey, City of Marikina, February 1999 - June 1999

1998 Reproductive Health-Family Planning Baseline Survey for 24 MNLF and Non-MNLF Communities in Mindanao, July 1998 - February 1999

1998 Multi-Indicator Cluster Survey, City of Mandaluyong, June 1998 - October 1998

1998 Multi-Indicator Cluster Survey, Municipality of Valenzuela, July 1998 - November 1998

1998 Multi-Indicator Cluster Survey, City of Caloocan, October 1998 - February 1999

1998 Multi-Indicator Cluster Survey, Province of Occidental Mindoro, August 1998 - December 1998

Improving the Quality of in FP-RH Services of Selected Communities of Pangasinan, June 1997 - June 1998

1997 Evaluation of Effectiveness of Pilot-Tested PCPD Audio-Visual and Print Instructional Materials on NFP Practices, January 1997 - June 1998

1997 Baseline Survey of Knowledge, Attitudes & Practice of Contraception, Maternal Health and Reproductive Tract Infections, CAR Region, August 1997 - December 1997

1997 Pangasinan Multi-Indicator Cluster Survey, April - August 1997

1997 Quezon City Multi-Indicator Cluster Survey, April - August 1997

1996 FP-Reproductive Health Baseline Survey of 18 UNFPA- Assisted Provincial FP Program, DOH - UNFPA, Manila, December 1995 - July 1996

Future Reproductive Health Program Directions in the Philippines, EWPC, Honolulu, April 1995 - June 1995

Views on Pre-marital Sex, Unmarried Parenthood, and the Sexual Double Standard, 1994 Young Adult Fertility Survey, Population Institute, University of the Philippines, May 1995 - June 1995

1999 Multi-Indicator Cluster Survey, Province of Pangasinan, January 1999 - May 1999

1999 Multi-Indicator Cluster Survey, City of Las Pinas, January 1999 - May 1999

The 2004 Quezon City Demographic and Health Survey

HIV-AIDS Situation in the Philippines, August 2005 - July 2006

Pangasinan Initiative for Addressing Unmet Need for Family Planning and

Working Towards Contraceptive Self-Reliance (CSR), January 2003 - May 2003

2001 Pangasinan Demographic and Health Survey, March - September 2001

2001 Multiple indicator Cluster Survey, Pasay City, April - August 2001

2000 Multiple indicator Cluster Survey, Quezon City, November 2000 - March 2001

2000 IEC Impact survey in Three (3) UNFPA-Assisted Provinces in the CAR, May - Aug. 2000

2000 Multi-Indicator Cluster Survey, Malabon, January - March 2000

1999 Multi-Indicator Cluster Survey, City of Valenzuela, January 1999 - March 2000

1999 Multi-Indicator Cluster Survey, Quezon City, December 1999 - March 2000

1999 Multi-Indicator Cluster Survey, Pasay, Nov. 1999 - March 2000

1999 Multi-Indicator Cluster Survey, Paranaque, October 1999 - Jan. 2000

1999 Multi-Indicator Cluster Survey, Municipality of San Juan, September 1999 - January 2000

1999 Household Survey on Volunteering and Giving of the Philippine Non-Profit Sector, July 1999 - November 1999

Abortion and Reproductive Health Among Filipino Couples, FORD Foundation, Manila, 1992 - 1994

## **Publications**

- 2001 Raymundo, C.M., Zablan, Z.C., Cabigon, J.V., Cruz, G.T., & Berja, C.L., *Unsafe Abortion in the Philippines: A Threat to Public Health*. Demographic Research and Development Foundation, Inc., UPPI, Diliman, Quezon City, 2001, ISBN 971-9012-01-03, 2001.
- 1998 Zablan, Z.C., *Consequences of Abortion*. in Pilar Jimenez (ed.) *Abortion: A Public Health Issue in the Philippines*, A Research Dissemination Conference, Task Force on Social Science and Reproductive Health, De La Salle University, Manila, 1998.
- Zablan, Z.C., *The Philippine Demographic Transition: Implications for National Development and Identity*. Centennial Issue, Social Science Information, Philippine Social Science Council, Diliman, Quezon City, 1998, 26(2).
- Zablan, Z.C., *The Unmet Need Algorithm for Prioritizing Reproductive Health and Family Planning Services to Women in the Community*. Proceedings of the 7<sup>th</sup> National Convention on Statistics, Philippine Statistical System and NSCB, 1998:621-633.
- 1996 Zablan, Z.C., de Guzman, E.A., & Tabije, T.L., *Differentials in Philippine Fertility from the 1990 Census*. Monograph No. 11. Utilization and Dissemination of Demographic Data, 1996.
- 1995 Zablan, Z.C., "Policy Recommendations" and "Family Planning" chapters. In



- 1995 Pangasinan Demographic Health Survey, Pangasinan Population Office, Lingayen, 1995.
- Zablan, Z.C., Diaz, G.S.A., Lusterio, C.R., & Ogbinar, E.F., Conditions of Households with Heads in Dissolved Unions. Monograph No. 3. Utilization and Dissemination of Demographic Data, 1995.
- 1994 Zablan, Z.C., The Unmet Need For Contraceptive Services of Filipino Couples in 1986. in Herrin, A.H. (ed.) Population, Human Resources and Development, University of the Philippines Press and CIDS, Diliman, Quezon City, 1994.
- Zablan, Z.C., Maternal and Infant/Child Health Nutrition and Mortality: Levels, Trends and Determinants. in Herrin, A.H. (ed.) Population, Human Resources and Development, University of the Philippines Press and CIDS, Diliman, Quezon City, 1994.
- Zablan, Z.C., State of the Art in Fertility and Mortality Analysis: Implications for Philippine Demographic Research. Discussion Paper No. 94-03, ISSN 0117-7877, Institutional Development Project, Population Institute, CSSP University of the Philippines, 1994.
- Zablan, Z.C., Inroads to Gender Sensitivity, The POPCOM Experience. University of the Philippines Population Institute, 1994.
- 1991 Zablan, Z.C., & Quintong, J.B., Philippines and Accessibility of Contraceptives. Asian Population Studies Series, UNESCAP, Bangkok, 1991(103-D).
- Choe, M.K., & Zablan, Z.C., Contraceptive Use Discontinuation and Failure Rates in the Philippines: Estimates from the 1986 Contraceptive Prevalence Survey. In *Measuring the Dynamics of Contraceptive Use*, United Nations ST/ESASER.R/106, New York, 1991.
- 1989 Zablan, Z.C., Choe, M.K., Palmore, J., Ahmed, T., Alcantara, A., & Kost, K., Contraceptive Method Choice in the Philippines, 1973-1983. *Journal of Biological Science*, 1989(Supl. 11):61-74.
- 1988 Zablan, Z.C., Knowledge Attitudes of Grassroots Family Planning Workers About Contraceptive Methods. Asian Population Studies Series, UNESCAP, Bangkok, 1988(86-F).
- Zablan, Z.C., Proximate Determinants of Philippine Fertility. *Philippine Population Journal*, 1988, 4.
- 1985 Zablan, Z.C., An Assessment of the Metro Manila Family Planning Outreach Project. *Philippine Population Journal*, 1985, 1.
- Zablan, Z.C., Breastfeeding and Fertility Among Philippine Women: Trends, Mechanisms and Impact. In *Breastfeeding and Fertility*, *Journal of Biosocial Science* (Potts, Thapa and Herbertson, Eds.), 1985.
- 1984 Zablan, Z.C., Development Implications of Mortality Trends. Perspectives for Population and Development Planning, POPCOM/NEDA, 1984.
- Zablan, Z.C., Country Assessment: Philippines. In *H. Schubnell al. (Eds.), Population Policies, in Asian Countries* Draeger Foundation and Centre of Asian Studies, University of Hongkong, 1984.
- 1983 Zablan, Z.C., Development Implications of Mortality Trends. Proceedings of the 6<sup>th</sup> National Population Welfare Congress "Perspectives for Population and Development Planning", PICC, Manila, 1983.

Zablan, Z.C., Proximate Determinants of Fertility and Their Effect on Fertility Patterns in the Philippines. Technical Bulletin No. 2083, WFS/ISI, London, 1983.

Zablan, Z.C., Trends and Differentials in Mortality in Conception (ed). Population of the Philippines Current Perspective and Future Prospects. NEDA/EPRS, 1983.

Zablan, Z.C., Proximate Determinants of Fertility and Their Effect on Fertility Patterns in the Philippines. Technical Bulletin No. 2083, WFS/ISI, London, 1983.

1978 Zablan, Z.C., Trends and Differentials in Mortality. Population in the Philippines: Country Monograph Series No. 5, UN/ESCAP, Bangkok, 1978(5):99-117.

1975 Zablan, Z.C., The Prediction of Adoption and Continued Practice of Contraception Among Enrolees in Family Planning Clinics 1972. Philippines Sociological Review, 1975, 23(1-4).

# AUTHOR INDEX

---

## **Afuang, Leticia Espiritu**

Environmental Science Management  
Herpetology  
Wildlife Biology  
Wildlife Conservation

## **Aquino-Ruivivar, Leonor**

Applied Mathematics  
Combinatorics  
Dynamic Systems  
Graph Theory  
Statistics

## **Awitan, Fritz Christian**

Device Fabrication and  
Characterization  
Device Physics and Materials Science  
Product Engineering and Failure  
Analysis  
Semiconductors (GaAs, Si, Metal-oxide  
semiconductors)

## **Bailon-Somintac, Michelle**

Applied Physics  
Condensed Matter Physics  
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Materials Physics  
Materials Science  
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Quantum Physics  
Solid State Physics

## **Banaay, Charina Gracia B.**

Botany  
Microbial Ecology  
Microbiology  
Molecular Biology  
Plant Ecology

## **Cadatal-Raduban, Marilou**

Applied Physics  
Experimental Physics  
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Photonics  
Rare Earth Doped Fluoride Materials  
Solid State Physics  
Ultraviolet and Vacuum Ultraviolet  
Lasers  
Ultraviolet and Vacuum Ultraviolet  
Spectroscopy

## **Camacho Grageda, Maria Vivian C.**

Aquatic Ecology  
Fish Biology  
Fisheries Science  
Limnology  
Marine Ecology  
Marine Science

## **Canama, Alma O.**

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Plant Genetics  
Plant Pathology

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Ecology  
Evolutionary Biology  
Fauna  
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Mitochondrial DNA  
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Wildlife Biology

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Engineering  
Magnetic Nanomaterials  
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**Gruezo, William SM**

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Biodiversity Inventory  
Biology  
Biosystematics  
Botany  
Forestry  
Horticulture  
Plant Taxonomy  
Quaternary Environments

**Jaculbia, Rafael Buan**

Fluorescence Imaging  
Fluorescence Lifetime Imaging  
Microscopy  
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Raman Scattering  
Scanning Tunneling Microscopy  
Semiconductor  
Terahertz Spectroscopy

**Laude, Rita P.**

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**Manila-Fajardo, Analinda Creencia**

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Botany  
Ecology  
Environmental Biology  
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Plant Reproductive Biology  
Pollination Biology

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Microbiology  
Nonpoint source pollution  
Wastewater treatment  
Water quality modeling

**Vega II, Michael Francis Ian Guerra**

Black Hole Physics  
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Gravitational Physics  
Mathematical Physics  
Relativistic Astrophysics

**Ventura, Jey-R**

Anaerobic Culture  
Anaerobic Digestion  
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**Zablan, Zelda C.**

Family Planning  
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Social science

# SPECIALIZATION INDEX

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Agricultural Plant Science  
Gruezo, William SM

Agricultural Science  
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Agriculture  
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Anaerobic Culture  
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Anaerobic Digestion  
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Gruezo, William SM

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Biomass Conversion  
Ventura, Jey-R

Biomass energy  
Ventura, Jey-R

Bioreactors  
Ventura, Jey-R

Biosystematics  
Gruezo, William SM

Biosystems Engineering  
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Black Hole Physics  
Vega II, Michael Francis Ian Guerra

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Manila-Fajardo, Analinda Creencia  
Gruezo, William SM  
Banaay, Charina Gracia B.

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*Clostridium tyrobutyricum*  
Ventura, Jey-R

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Device Fabrication and Characterization Awitan, Fritz Christian	Feasibility Studies on Biofuel Ventura, Jey-R
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Dynamic Systems Aquino-Ruivivar, Leonor	Fish Biology Camacho Grageda, Maria Vivian C.
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Environmental Engineering and Biotechnology Ventura, Jey-R	Gasification Ventura, Jey-R
Environmental Impact Assessment Ventura, Jey-R	General Relativity Vega II, Michael Francis Ian Guerra
Environmental Science Management Afuang, Leticia Espiritu	Genetics Laude, Rita P.
Ethanol Production Ventura, Jey-R	Genetics (Plants) Diaz, Maria Genaleen Q.
Evolutionary Biology de Guia, Anna Pauline O.	Graph Theory Aquino-Ruivivar, Leonor

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Herpetology Afuang, Leticia Espiritu	Marine Science Camacho Grageda, Maria Vivian C.
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Honeybees Manila-Fajardo, Analinda Creencia	Materials Physics Bailon-Somintac, Michelle
Horticulture Gruezo, William SM	Materials Science Gabayno, Jacque Lynn F. Bailon-Somintac, Michelle
Hydrology Ventura, Jey-R	Mathematical Physics Vega II, Michael Francis Ian Guerra
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Hydrothermal Treatment Ventura, Jey-R	Methanogens Ventura, Jey-R
Land Use Ventura, Jey-R	Microalgae Propagation and Biofuel Production Ventura, Jey-R
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Lignocellulose Degradation Ventura, Jey-R	Microbial Ecology Ventura, Jey-R
Lignocellulosic Conversion Ventura, Jey-R	Microbiology Diaz, Maria Genaleen Q. Paule-Mercado, Ma Cristina A. Banaay, Charina Gracia B.
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Molecular genetics  
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Mortality  
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Ventura, Jey-R

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Zablan, Zelda C.

Scanning Tunneling Microscopy  
Jaculbia, Rafael Buan

Semiconductor  
Jaculbia, Rafael Buan

Semiconductors (GaAs, Si, Metal-oxide semiconductors)  
Awitan, Fritz Christian

Social science

Zablan, Zelda C.

Solid State Physics

Bailon-Somintac, Michelle

Cadatal-Raduban, Marilou

Statistics

Aquino-Ruivivar, Leonor

Terahertz Spectroscopy

Jaculbia, Rafael Buan

Transesterification

Ventura, Jey-R

Ultraviolet and Vacuum Ultraviolet Lasers

Cadatal-Raduban, Marilou

Ultraviolet and Vacuum Ultraviolet

Spectroscopy

Cadatal-Raduban, Marilou

Wastewater treatment

Paule-Mercado, Ma Cristina A.

Wastewater Treatment

Ventura, Jey-R

Water quality modeling

Paule-Mercado, Ma Cristina A.

Water Quality Monitoring

Ventura, Jey-R

Wildlife Biology

de Guia, Anna Pauline O.

Afuang, Leticia Espiritu

Wildlife Conservation

Afuang, Leticia Espiritu

Zoology

De Lara, Ayolani