



# The **Philippine** **Men & Women** of Science

A compilation of bio-bibliographical information on men and women in the field of science and technology.

Volume XXXIII

# **Philippine Men and Women of Science**

**(Formerly Philippine Men of Science)**



**INFORMATION RESOURCES AND ANALYSIS DIVISION  
Science and Technology Information Institute  
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## PREFACE

The Philippine Men and Women of Science (PMWS) is an online publication of the Science and Technology Information Institute (STII). The first volume was published in 1964 as the Philippine Men of Science (PMS) featuring one hundred and one Filipino scientists' contributions to the scientific community.

Investigating the physics and chemistry of the globe can help us manage our resources, control pollution, and understand climate change. At present, a growing interest on geological and environmental phenomena on earth helps steer environmental management and environmental impact. From methods and field techniques to chemical and biochemical processes that underlie geology, atmosphere, and climatological processes, massive forces and molecular level aspects bring about changes on earth.

This online biobibliographical publication features researchers on engineering, industry and environmentally-related areas that touch the evaluation of geologic hazards, earth processes, and dynamics. Shrinking the world to the molecular level while looking into interactions on a larger scale help establish a firm grounding in these interdisciplinary fields of study.

The *Philippine Men and Women of Science Volume 33* bring together information on some of our scientists in the field. As a tool, the information presented supports researchers and opens readers to the new face of science in subject areas such as Geology, Geoscience, Biotechnology, Chemistry, Engineering, Material Science, and Physics. If a quick preview is desired, readers can use the authors and specialization indexes.

Our team upholds a continuous, concerted effort that diligently coordinates records. To date, we have persevered in the timeless tradition of ongoing data mining, organization, and communication of facts on productive scientists and researchers in their fields.

We offer our deepest gratitude to our scientists, researchers, partners, and staff who contributed to the completion of this volume.

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## Honors / Awards

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## Papers Presented

- 2015 December 14-18 Yan, B., Bopp, R., Chillrud, S.N., & Abrajano, T.A., Jr. (2015 December 14-18). Over a century of PAH contamination history to New York City, 2015 American Geophysical Union Fall Meeting.
- 2002 March 25-27 Perry, E.A., Bopp, R., Keane, D., & Abrajano, T.A., Jr. (2002 March 25-27). History of polycyclic aromatic hydrocarbon (PAH) deposition in the New York Harbor, Northeastern Section - 37<sup>th</sup> Annual Meeting.
- 2000 May 22-25 Sturchio, N.C., Heraty, L., Holt, B.D., Huang, L., Abrajano, T.A., Jr., & Smith, G. (2000 May 22-25). Stable isotope diagnostics of chlorinated solvent behavior in contaminated aquifers, 2<sup>nd</sup> International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA.
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- 1991 Abrajano, T.A., Jr., & Johnson, L.H. (1991). Scientific basis for nuclear waste management XIV, International Symposium on the Scientific Basis for Nuclear Waste Management 1990: Boston, Mass., Materials Research Society.

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O'Malley, V.P., Abrajano, T.A., Jr., & Hellou, J., A novel approach to apportioning polycyclic aromatic hydrocarbon sources in estuarine environments. Joint CSCE-ASCE National Conference on Environmental Engineering, 1993.  
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Abrajano, T., Jr., Sturchio, N., Kennedy, B., Lyon, G., Muehlenbachs, K., & Bohlke, J., Geochemistry of reduced gas related to serpentinization of the Zambales ophiolite, Philippines. *Applied Geochemistry*, 1990, 5(5-6):625-630.  
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Abrajano, T.A., Jr., Bates, J.K., & Bradley, J.P., Analytical electron microscopy of leached nuclear waste glasses. *MRS Proceedings*, 1989:CONF-890488-13.  
Sturchio, N.C., Abrajano, T.A., Jr., Murowchick, J.B., & Muehlenbachs, K., Serpentinization of the Acoje massif, Zambales ophiolite, Philippines: hydrogen and oxygen isotope geochemistry. *Tectonophysics*, 1989, 168(1-3):101-107.  
Biwer, B.M., Bates, J.K., Abrajano, T.A., Jr., & Bradley, J.P., Comparison of the Layer Structure of Vapor Phase and Leached SRL Glass by Use of AEN. *MRS Proceedings*, 1989, 176:doi: 10.1557/PROC-176-255.

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- 1988 Abrajano, T., Jr., Sturchio, N., Bohlke, J., Lyon, G., Poreda, R., & Stevens, C., Methane-hydrogen gas seeps, Zambales Ophiolite, Philippines: Deep or shallow origin? Chemical Geology, 1988, 71(1-3):211-222.
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**Name** Norma O. Aguilar

**Gender** Female

**Organizational Affiliations**

Professor, Plant Biology Division, IBS-CAS UPLB, College, Laguna

**Education**

Doctor of Agriculture/Botany (Morpho/Systematics & Biochemistry), University of Tokyo, 7 Chome-3-1 Hongo, Bunkyo, Tokyo 113-8654, Japan 1990

Master of Science in Agriculture (Botany, Developmental Plant Anatomy), University of the Philippines Los Baños, Laguna 1959

Bachelor of Science in Agriculture (Botany, Morpho, anatomy), University of the Philippines Los Baños, Laguna 1957

**Fields of Specialization**

Biological Sciences

Plant Biology

Morpho/anatomy

Taxonomy

Ecology

Phytogeography

**Employment**

Adjunct Professor, University of the Philippines Los Baños, 1999-2003

Professor, University of the Philippines Los Baños, 1997-1999

Associate Professor, University of the Philippines Los Baños, 1990-1996

Assistant Professor, University of the Philippines Los Baños, 1959-1975

Instructor 1-3, University of the Philippines Los Baños, 1959-1975

Graduate Research Fellow, University of the Philippines Los Baños, 1957-1959

Student Assistant, Dept. of Botany, University of the Philippines Los Baños, 1954-1957

**Honors / Awards**

Outstanding Monograph Award, National Academy of Science and Technology (NAST) 2002

Special Citation for Monograph Award, National Academy of Science and Technology (NAST) 2002

CAS Service Award, UP Los Baños, College, Laguna 2002

**Researches**

**Completed**

Seed identification manual for woody species of flowering plants.

Taxonomic studies on legumes in the Philippines

### On-going

Information on summary update on legume study in the Philippines

Pictorial handbook for identification of legumes in the Philippines

Vascular flora of Mt. Makiling and vicinity

### Publications

- 2000 Aguilar, N.O., Minor stimulants: *Astilbe philippinensis*, *Solanum inequilaterale*. PROSEA 6 Stimulants, Backhuys, Leiden, The Netherlands, 2000:124-125; 135.  
Aguilar, N.O., Handbook on interesting spore and seed-bearing plants of Mt. Pulag. UPLB-MNH Publication, 2000:49 pp.  
Aguilar, N.O., Handbook of medicinal and poisonous plants of Mt. Pulag. UPLB-MNH Publication, 2000.
- 1999 Aguilar, N.O., *Blumea balsamifera* (L) DC. PROSEA 19 Essential-oil Plants Backhuys Pub, Leiden, The Netherlands, 1999:68-70.  
Aguilar, N.O., *Aloe*, *Oldenlandia*, *Quisqualis*. PROSEA, Medicinal and Poisonous Plants I. Backhuys Pub., Leiden, The Netherlands, 1999, 12(1):100-104; 364-367.  
Aguilar, N.O., *Ocinum basilicum* L. PROSEA 13 Spices, Backhuys Pub., Leiden, The Netherlands, 1999:151-156.
- 1994 Aguilar, N.O., Pitargue, F.C., Jr., & Cajano, M.A.O., Nodulation of legumes in the Philippines. In: *Advances in Legumes Systematics 5. The Nitrogen Factor*, Royal botanic Garden Kew, 1994:25-31.
- 1990 Aguilar, N.O., Botanical studies on legumes in the Philippines. PhD Thesis, University of Tokyo, Japan, 1990:188 p.
- 1989 Aguilar, N.O., Nodulation among the legumes and non-legumes in the Philippines rangelands. *NRCP Bulletin*, 1989, 39(1):151-204.
- 1976 Sajise, P.E., Orlindo, N.M., Lales, J.S., Castillo, L.S., Atabay, R.C., & Aguilar, N.O., The ecology of Philippine grassland I. Floristic composition and community dynamics. *Philippine Agriculture*, 1976, 59(9-10):317-334.

**Name** Marolo C. Alfaro

**Gender** Male

**Organizational Affiliations**

Associate Professor, University of Manitoba, Winnipeg, Manitoba, Canada

Associate Department Head, Department of Civil Engineering at University of Manitoba, Winnipeg, Canada

Vice-President (Technical), The Society of Philippine-Educated Professional Engineers of Manitoba (SPEPEM),

Director, Canadian Geotechnical Society (CGS) for the Manitoba Region, Manitoba, Canada

**Education**

Doctor of Philosophy in Civil Engineering, Saga University, Japan 1996

Masters of Engineering in Geotechnical Engineering, Asian Institute of Technology, Paholyothin Highway, Khlong Luang District, Pathum Thani 12120, Thailand 1988

Bachelor of Science in Civil Engineering, University of Mindanao, Talomo, Davao City, Philippines 1984

**Fields of Specialization**

Civil Engineering

Geosynthetics in civil engineering applications

Geosciences

Mechanical Engineering

Soil and ground improvement techniques

Soft clay engineering

**Association Membership**

Member, International Association of Lowland Technology (IALT)

Member, Canadian Society for Civil Engineering (CSCE)

Member, Canadian Geotechnical Society (CGS)

Member, American Society of Civil Engineers (ASCE)

Member, Association of Professional Engineers and Geoscientists of Manitoba (APEGM)

Member, International Society of Geosynthetics (IGS)

Member, The International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)

**Honors / Awards**

Balik Scientist Award, Department of Science and Technology 2010

## Trainings

Design and Construction of Geosynthetic-Reinforced Soil (GRS) Structures, De La Salle University Manila 2010 August 2

Riverbank Stabilization Using Rockfill Columns, De La Salle University Manila 2010 August 3

## Papers Presented

2012 August 19-22 Batenipour, H., Alfaro, M., Graham, J., & Kalynuk, K.P. (2012 August 19-22). Segregation potential from a highway embankment on thawed permafrost, 15<sup>th</sup> International Conference on Cold Regions Engineering, Quebec, Canada.

2012 June 17-20 Graham, J., & Alfaro, M. (2012 June 17-20). Accreditation, Licensing, and Specialization for Employment, 2012 Canadian Engineering Education Association (CEEA12) Conference.

2011 October 2-6 Batenipour, H., Alfaro, M., Graham, J., & Kalynuk, K. (2011 October 2-6). Deformations of a highway embankment on degraded permafrost, 14<sup>th</sup> Pan-American Conference on Soil Mechanics and Geotechnical Engineering (PCSMGE) and the 64<sup>th</sup> Canadian Geotechnical Conference (CGC).

2010 Batenipour, H., Kurz, D.R., Alfaro, M.C., Graham, J., & Kalynuk, K. (2010). Results from an Instrumented Highway Embankment on Degraded Permafrost, 63<sup>rd</sup> Canadian Geotechnical Conference & 6<sup>th</sup> Canadian Permafrost Conference. Calgary, Alberta, Canada.

2009 Batenipour, H., Kurz, D.R., Alfaro, M.C., Graham, J., & Ng, T.N.S. (2009). Highway Embankment on Degrading Permafrost, 14<sup>th</sup> Conference on Cold Regions Engineering in Duluth, Minnesota, USA.

2009 September Batenipour, H., Kurz, D., Alfaro, M., & Graham, J. (2009 September). Effect of Temperature on the 1-D Behavior of Plastic Clay, 62<sup>nd</sup> Canadian Geotechnical Conference, Halifax NS.

2005 January 24-26 Pathak, Y.P., & Alfaro, M.C. (2005 January 24-26). Laboratory Simulation of Seasonal Wetting-Drying Cycles on Geosynthetic-Reinforced Clay Slopes and Embankments, Geo-Frontiers Congress 2005, Austin, Texas, United States.

1996 Bathurst, R.J., & Alfaro, M.C. (1996). Review of seismic design, analysis and performance of geosynthetic reinforced walls, slopes and embankments, International Symposium on Earth Reinforcement, Fukuoka, Kyushu, Japan.

1991 June 10-12 Bergado, D.T., Sampaco, C.L., Shivashankar, R., Alfaro, M.C., Anderson, L.R., & Balasubramaniam, A.S. (1991 June 10-12). Performance of welded wire wall with poor quality backfills on soft clay, ASCE Geotechnical Engineering Congress, Boulder, Colorado, USA.

## Publications

2016 Mosallanezhad, M., Alfaro, M., Hataf, N., & Sadat Taghavi, S.H., Performance of the new reinforcement system in the increase of shear strength of typical geogrid interface with soil. *Geotextiles and Geomembranes*, 2016, 44:457-462.

Mosallanezhad, M., Sadat Taghavi, S.H., Hataf, N., & Alfaro, M.C., Experimental and numerical studies of the performance of the new reinforcement system under pull-out conditions. *Geotextiles and Geomembranes*, 2016, 44:70-80.

2015 Graham, J., Alfaro, M., Batenipour, H., & Kurz, D., Warming Climate Damages Northern Roads. *Journal of Student Science and Technology*, 2015, 8(1):55-63.

- 2013 Batenipour, H., Alfaro, M., Kurz, D., & Graham, J., Deformations and ground temperatures at a road embankment in northern Canada. *Canadian Geotechnical Journal*, 2013:260-271.  
 Regehr, J., Milligan, C., Montufar, J., & Alfaro, M.C., Review of effectiveness and costs of strategies to improve roadbed stability in permafrost regions. *Journal of Cold Regions Engineering*, 2013, 27(3):doi: 10.1061/(ASCE)CR.1943-5495.0000054.  
 Graham, J., & Alfaro, M., Accreditation, Licensing, and Specialization for Employment. *Proceedings of the 2012 Canadian Engineering Education Association (CEEAA12) Conference*, 2013.
- 2012 Bathurst, R.J., Hatami, K., & Alfaro, M.C., Geosynthetic Reinforced Soil Walls and Slopes: Seismic Aspects. Chapter 14 in *Handbook of Geosynthetic Engineering*, 2<sup>nd</sup> Edition (S.K. Shukla - Editor), Thomas Telford Ltd., London, UK, 2012:61pp.  
 Alfaro, M.C. & Pathak, Y.P., Laboratory Performance of Geogrid-reinforced Soils Subjected to Freezing and Thawing. *ASTM Geotechnical Testing Journal*, 2012, 35(5): doi: 10.1520/GTJ103101.  
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- 2011 Thiessen, K.J., Alfaro, M.C. & Blatz, J.A., Measuring the Load-Deformation Response of Rockfill Columns by a Full-Scale Test on Natural Riverbank. *Canadian Geotechnical Journal*, 2011, 48(7):1032-1043.  
 Graham, J., Alfaro, M., & Blatz, J., Natural Processes and Strength Degradation. *Special Volume on Bifurcations, Instabilities and Degradations in Geomaterials. Collected Papers on IWBDG2008, Lake Louise, Alberta, Canada, 2008*. Richard Wan, Mustafa Alsaleh & Joe Labuz, Editors, publ. Springer, New York, NY, 2011:187-210.  
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- 2010 Abdulrazaq, W.F., Alfaro, M.C., & Blatz, J.A., Evaluating Stability of Riverbanks Reinforced with Rockfill Columns. *Lowland Technology International Journal*, 2010, 12(2):1-8.  
 Pathak, Y.P., & Alfaro, M.C., Wetting-Drying Behaviour of Geogrid-Reinforced Clay under Working Load Conditions. *Geosynthetics International Journal*, 2010, 17(2):144-156.  
 Pongchompu, P., Hayashi, S., Suetsugu, D., Du, Y.J., & Alfaro, M.C., Performance of Raft and Pile Foundation on Soft Ariake Clay Ground. *Lowland Technology International*, 2010, 12(1):41-46.  
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- 2009 Alfaro, M.C., Ciro, G.A., Thiessen, K.J., & Ng, T., Case Study of Degrading Permafrost beneath a Road Embankment. *ASCE Journal of Cold Regions Engineering*, 2009, 23(3):93-111.  
 Alfaro, M.C., Blatz, J.A., Abdulrazaq, W.F., & Kim, C.S., Evaluating shear mobilization in rockfill columns used for riverbank stabilization. *Canadian Geotechnical Journal*, 2009, 46(8):976-986.  
 Batenipour, H., Kurz, D., Alfaro, M., & Graham, J., Effect of Temperature on the 1-D Behavior of Plastic Clay. *Proceedings of 62<sup>nd</sup> Canadian Geotechnical Conference*, Halifax NS, 2009:47-52.

- Batenipour, H., Kurz, D.R., Alfaro, M.C., Graham, J., & Ng, T.N.S., Highway Embankment on Degrading Permafrost. Proceedings of the 14<sup>th</sup> Conference on Cold Regions Engineering in Duluth, Minnesota, USA, 2009:512-521.
- 2008 Pathak, Y.P., & Alfaro, M.C., Laboratory Simulation of Seasonal Wetting-Drying Cycles on Geosynthetic-Reinforced Clay Slopes and Embankments. Proceedings of the Geo-Frontiers Congress 2005. Geosynthetics Research and Development in Progress. ASCE Library, 2008:[https://doi.org/10.1061/40782\(161\)23](https://doi.org/10.1061/40782(161)23).  
Alfaro, M., Blatz, J., & Graham, J., Refining geotechnical education to reflect modern engineering practice. Geotechnical Special Publications, 2008, 61(2).
- 2007 Graham, J., Franklin, K., Alfaro, M.C., & Wortley, J., Degradation of Shaley Limestone Riprap. Canadian Geotechnical Journal, 2007, 44(11):1265-1272.
- 2006 Ciro, G.A., & Alfaro, M.C., Adaptation Strategies for Road Embankments on Permafrost Affected by Climate Warming. IEEE EIC Climate Change Technology - CCC, 2006.  
Alfaro, M.C., Blatz, J.A., & Graham, J., Geosynthetic Reinforcement for Embankments Over Degrading Discontinuous Permafrost Subjected to Prestressing. Lowland Technology International Journal, 2006, 8(1):47-54.  
Krahn, T., Blatz, J.A., Alfaro, M.C., & Bathurst, R.J., Large Scale Interface Testing of Sandbag Dyke Materials. Geosynthetics International Journal, 2006, 14(2):119-126.
- 2005 Alfaro, M.C., & Pathak, Y.P., Dilatant Stresses at the Interface Between Granular Fills and Geogrid Strip Reinforcements. Geosynthetics International Journal, 2005, 12(5):239-252.
- 2004 Garinger, B., Alfaro, M.C., Graham, J., Dubois, D., & Man, A., Instability of Dykes at Seven Sisters Generating Station. Canadian Geotechnical Journal, 2004, 41(5):959-971.  
Graham, J., Alfaro, M.C., & Ferris, G., Compression and strength of dense sand at high pressures and elevated temperatures. Canadian Geotechnical Journal, 2004, 41(6):1206-1212.
- 2002 Bathurst, R.J., Hatami, K., & Alfaro, M.C., Geosynthetic-reinforced soil walls and slopes-seismic aspects. Geosynthetics and Their Applications (ed. by Shukla, S. K.), Thomas Telford, Ch. 14, 2002:327-392.
- 2001 Alfaro, M.C., & Wong, R.C., Laboratory studies on Fracturing of Low-Permeability Soils. Canadian Geotechnical Journal, 2001, 38(2):303-315.  
Wong, R.C.K., & Alfaro, M.C., Fracturing in Low-Permeability Soils for Remediation of Contaminated Ground. Canadian Geotechnical Journal, 2001, 38(2):316-327.  
Graham, J., Tanaka, N., Crilly, T., & Alfaro, M., Modified Cam-Clay modeling of temperature effects in clays. Canadian Geotechnical Journal, 2001, 38:608-621.
- 1998 Wong, R.C.K., & Alfaro, M.C., Discussion of "Liquefaction and Residual Strength of Sands from Drained Triaxial Tests. Journal of Geotechnical and Geoenvironmental Engineering, 1998, 124(11).
- 1997 Alfaro, M.C., Hayashi, S., Miura, N., & Bergado, D.T., Deformation of Reinforced Soil Wall-Embankment System on Soft Clay Foundation. Soils and Foundations, 1997, 37(4):33-46.  
Bathurst, R.J., Cai, Z., Alfaro, M., & Pelletier, M., Seismic design issues for geosynthetic reinforced segmental retaining walls. In: Wu, editor. Mechanically stabilized backfill. Rotterdam, The Netherlands: Balkema, 1997:79-97.
- 1996 Bathurst, R.J., & Alfaro, M.C., Review of seismic design, analysis and performance of geosynthetic reinforced walls, slopes and embankments. Proceedings of the International Symposium on Earth Reinforcement, Fukuoka, Kyushu, Japan, 1996:887-918.
- 1995 Alfaro, M.C., Hayashi, S., Miura, N., & Watanabe, K., Pullout Interaction Mechanism of Geogrid Strip Reinforcement. Geosynthetics International Journal, 1995, 2(4):679-698.

- Alfaro, M.C., Miura, N., & Bergado, D.T., Soil-Geogrid Reinforcement Interaction by Pullout and Direct Shear Tests. *ASTM Geotechnical Testing Journal*, 1995, 18(2):157-167.
- 1994 Bergado, D.T., Chai, J.C., Alfaro, M.C. & Balasubramaniam, A.S., Improvement Techniques of Soft Ground in Subsiding and Lowland Environment. A.A. Balkema Publishers, Rotterdam, Netherlands, 1994:222p.
- 1993 Bergado, D.T., Shivashankar, R., Alfaro, M.C., Chai, J.C., & Balasubramaniam, A.S., Interaction Behaviour of Steel Grid Reinforcements in a Clayey Sand. *Geotechnique*, 1993, 43(4):589-600.
- Bergado, D.T., Alfaro, M.C., & Balasubramaniam, A.S., Improvement of Soft Bangkok Clay Using Vertical Drains. *Geotextiles and Geomembranes*, 1993, 12(7):615-663.
- Bergado, D.T., Mukherjee, K., Alfaro, M.C., & Balasubramaniam, A.S., Prediction of Vertical Drain Performance by the Finite-Element Method. *Geotextiles and Geomembranes*, 1993, 12(6):567-586.
- Bergado, D.T., Macatol, K.C., Amin, N.U., Chai, J.C., Alfaro, M.C. & Anderson L.R., Interaction of Lateritic Soil and Steel Grid Reinforcement. *Canadian Geotechnical Journal*, 1993, 30(2):376-384.
- Bergado, D.T., Chai, J.C., Abiera, H.O., Alfaro, M.C., & Balasubramaniam, A.S., Interaction between cohesive-frictional soil and various grid reinforcements. *Geotextiles and Geomembranes*, 1993, 12:327-349.
- 1992 Bergado, D.T., Lo, K.H., Chai, J.C., Shivashankar, R., Alfaro, M.C., & Anderson, L.R., Pullout Tests Using Steel Geogrids Reinforcements with Low-Quality Backfill. *ASCE Journal of Geotechnical Engineering*, 1992, 118(7):1047-1063.
- Bergado, D.T., Enriquez, A.S., Sampaco, C.L., Alfaro, M.C., & Balasubramaniam, A.S., Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay. *ASCE Journal of Geotechnical Engineering*, 1992, 118(7):1012-1030.
- Bergado, D.T., Hardiyatimo, H.C., Cisneros, C.B., Chun, J.C., Alfaro, M., Balasubramaniam, A., & Anderson, L.R., Pullout Resistance of Steel Geogrids with Weathered Clay as Backfill Material. *Geotechnical Testing Journal*, 1992, 15(1):33-46.
- Knodel, P.C., Bergado, D.T., Daria, P.M., Sampaco, C.L., & Alfaro, M., Closure to "Discussion on 'Prediction of Embankment Settlements by In-Situ Tests,' by M Gambin" by D.T. Bergado, P.M. Daria, C.L. Sampaco, and M.C. Alfaro. *Geotechnical Testing Journal*, 1992:doi:10.1520/GTJ10242J.
- 1991 Bergado, D.T., Shivashankar, R., Sampaco, C.L., Alfaro, M.C., & Anderson, L.R., Behavior of a welded wire wall with poor quality, cohesive-friction backfills on soft Bangkok clay: a case study. *Canadian Geotechnical Journal*, 1991, 28(6):860-880.
- Bergado, D.T., Asakami, H., Alfaro, M.C., & Balasubramaniam, A.S., Smear Effects of Vertical Drains on Soft Bangkok Clay. *Journal of Geotechnical and Engineering*, 1991, 117(10):1509-1530.
- Bergado, D.T., Alfaro, M.C., & Chai, J.C., The Granular Pile: Its Present State and Future Prospects for Improvement of Soft Bangkok Clay. *Geotechnical Engineering*, 1991, 22:143-175.
- Bergado, D., Daria, P., Sampaco, C., & Alfaro, M., Prediction of Embankment Settlements by In-Situ Tests. *Geotechnical Testing Journal*, 1991, 14(4):425-439.
- 1990 Bergado, D.T., Chong, K.C., Daria, P.A.M., & Alfaro, M.C., Deformability and consolidation characteristics of soft Bangkok clay using screw plate tests. *Canadian Geotechnical Journal*, 1990, 27(5):531-545.

**Name** Arnold C. Alguno

**Gender** Male

**Organizational Affiliations**

JSPS Research Fellow Research Institute of Electrical Communication, Tohoku University, Japan,

**Education**

Doctor of Philosophy in Physics, Tohoku University, Sendai, Japan 2006

Master of Science in Physics, Mindanao State University-Iligan Institute of Technology, Iligan City 2002

Bachelor of Science in Electrical Engineering, Saint Joseph Institute of Technology, Butuan City 1995

**Fields of Specialization**

Material Science and Condensed Matter

Semiconductor Physics

Solar Cell Technology

Mechanical Engineering

Solid State Physics

Materials Physics

**Employment**

Professor (Full), Materials Science Laboratory, Department of Physics, Mindanao State University - Iligan Institute of Technology, 2009 January-2020 April

**Honors / Awards**

Balik Scientist Awardee, Department of Science and Technology 2009

**Papers Presented**

2004 Usami, N., Alguno, A., Fujiwara, K., & Nakajima, K. (2004). New Solar Cells using Ge Dots Embedded in Si PIN Structures, 2004 First IEEE International Conference on Group IV Photonics.

**Publications**

2015 Potestas, M., Alguno, A., Vequizo, R., Sambo, B.R., & Odarve, M.K., Characteristics of zinc sulphide nanostructures grown on silica modified-polyaniline with polymerization time-dependent. Proceedings of the First International Conference in Applied Physics and Materials Science. IOP Publishing, 2015, 79:doi:10.1088/1757-899X/79/1/012029.  
Paculba, H.M.D., Alguno, A.C., & Vequizo, R.M., The effects of precursor concentration and thermal annealing on the growth of zinc oxide nanostructures grown on silicon substrate. Proceedings of the First International Conference in Applied Physics and Materials Science. IOP Publishing, 2015, 79:doi:10.1088/1757-899X/79/1/012022.  
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**Name** Concepcion Fajardo Ang

**Gender** Female

**Organizational Affiliations**

University Researcher III, College of Medicine, University of the Philippines, Pedro Gil, Ermita, Manila

**Education**

Bachelor of Science in Medical Technology, Centro Escolar University, 1973

**Fields of Specialization**

Mycology

Molecular Microbiology

Microbiology

Mycobacterium Tuberculosis

Antimicrobial Susceptibility Testing

Antimicrobial Resistance

Antibiotic Resistance

Drug Resistance

Polymerase Chain Reaction (PCR)

Bacteriology

**Employment**

Laboratory Operational Manager, Medical Research Laboratory, Department of Medicine, 2000-2004 March

University Researcher Associate II, UP College of Medicine, 1990 January 1-1993 March

Research Assistant, UP College of Medicine, 1982 January 18-1989 April

Research Assistant, UP-NSTA Integrated Project No. 8004, 1977 July 1-1982 January 17

Research Assistant, Infectious Disease Section, Department of Medicine, University of the Philippines-Philippine General Hospital, 1976 December-1977 June

**Association Membership**

Vice President, Research, Extension, and Professional Staff Association (REPSA), University of the Philippines Manila

President, Research, Extension, and Professional Staff Association (REPSA), University of the Philippines Manila

Regular Member, National Research Council of the Philippines

**Publications**

2013

Montoya, J.C., Murase, Y., Ang, C., Solon, J., & Ohkado, A., A molecular epidemiologic analysis of Mycobacterium tuberculosis among Filipino patients in a

- suburban community in the Philippines. *Kehhaku: [Tuberculosis]*, 2013, 88(6):543-552.
- 2012 Dalmacion, G.V., Ortega, A.R., Pena, I.G., & Ang, C.F., Preliminary study on the In-Vitro Susceptibility of *Mycobacterium tuberculosis* Isolates to Virgin Coconut Oil. *Functional Foods in Health and Disease*, 2012, 2(8):290-299.
- 2011 Hui, D.S., Ip, M., Ling, T., Chang, S.C., Liao, C.H., Yoo, C.G., Kim, D.K., Yoon, H.I., Udompanich, V., Mogmeud, S., Muttalif, R., Salleh, A.M., Roa, C., Mendoza, M., Fajardo-Ang, C., Soepandi, P., Isbaniah, F., Burhan, E., Sudarmono, P., Mangunegoro, H., & Liu, H.H., A multicentre surveillance study on the characteristics, bacterial aetiologies and in vitro antibiotic susceptibilities in patients with acute exacerbations of chronic bronchitis. *Respirology*, 2011, 16(3):532-539.
- 2009 Catedral, E.J., Santos, R.E., Padilla, M.D.B., & Fajardo-Ang, C., Detection of *Mycobacterium tuberculosis* in corneas from donors with active tuberculosis disease through polymerase chain reaction and culture. *The British journal of ophthalmology*, 2009, 94(7):894-897.
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- 2007 Montoya, J.C., Magalonzo-De Jesus, M.S., Reclusado, G., Sombrero, L., & Ang, C.F., Characterization of Rifampicin Resistance in Philippine Isolates of *Mycobacterium tuberculosis* by Mutation of the *rpoB* Gene. *Philippine Journal of Science*, 2007, 136(2):147-153.
- 2005 Mendoza, M.T., Bulatao, W.C., Cajucom, M.A.M., & Ang, C.F., Drug Susceptibility Testing of *Mycobacterium tuberculosis* by Agar Proportion Method Using Lowenstein-Jensen and Middlebrook 7H10 with Drug Containing Disk Media. *International Journal of Antimicrobial Agents*, 2005:S88.
- 2004 Mendoza, M.T., Ang, C.F., Lazo, S., & Isaac, C., In Vitro Susceptibility of Multi-Drug Resistant *Mycobacterium tuberculosis* Isolated from Filipino Patients. *Philippine Journal of Microbiology and Infectious Diseases*, 2004, 33(3):95-97.
- 2003 Bellen, A.L., Ang, C., Montoya, J., & Mendoza, M.T., Accuracy of a Bacteriophage-based Assay in the Rapid Diagnosis of Pulmonary Tuberculosis. *Philippine Journal of Microbiology and Infectious Diseases*, 2003, 32(1):1-10.
- 2002 Montoya, J.C., Magalonzo-De Jesus, M.S., Reclusado, G., Sombrero, L., & Ang, C.F., Characterization of rifampicin resistance in Philippine isolates of *mycobacterium tuberculosis* utilizing the RNA polymerase B gene. *Acta Medica Philippina*, 2002, 38(1-4):7-15.
- 2001 Ang, C.F., Mendoza, M.T., Bulatao, W.C., & Cajucom, M.A.M., Culture Isolation of *Mycobacteria* by MB/BacT System Compared to Lowenstein Jensen Egg Medium Culture Method. *Philippine Journal of Microbiology and Infectious Diseases*, 2001, 30(2):40-43.

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1991

Montoya, J.C., Orteza, G.O., & Fajardo-Ang, C., Diagnosis of Tuberculous Meningitis Using Enzyme-Linked Immunosorbent Assay Utilizing a 30,000-Dalton Native Antigen of *Mycobacterium tuberculosis*. *Philippine Journal of Microbiology and Infectious Diseases*, 1991, 20(2):66-70.

**Name** Susan D. Arco

**Gender** Female

**Organizational Affiliations**

Professor, Institute of Chemistry, University of the Philippines, Diliman, Quezon City

**Education**

Doctor of Philosophy in Chemistry, University of the Philippines, Diliman, Quezon City 1997

Bachelor of Science in Chemistry, University of the Phiippines, Diliman, Quezon City 1981

**Fields of Specialization**

Synthetic Organic Synthesis

Synthesis of Water Soluble Chiral Catalyst

Synthesis of Therapeutic Chemicals and Chemical Intermediates

Utilization of Plant Resources for Valuable Raw Materials in Chemical and Pharmaceutical Products

Synthesis of Ionic Liquids based on 1-n-alkyl-3-methylimidazolium

Synthesis of Ionophores for use in the Development of Ion-Selective Electrodes for Potentiometric Detection of Metal Ions

Synthesis of Molecularly Imprinted Polymers

Green Chemistry

Polymer Chemistry

Ionic Liquids

Materials Chemistry

Development of Organic Reactions in Benign Solvents

**Association Membership**

Treasurer, UP Chemistry Alumni Association

Member, Kapisanan ng mga Kimiko sa Pilipinas

Member, Integrated Chemists of the Philippines

**Honors / Awards**

UP Centennial Faculty Grant, University of the Philippines 2009 July -2010 June

UP Centennial Faculty Grant, University of the Philippines 2008 July - 2009 June

UP International Publications Award, University of the Philippines 2007

**Trainings**

Post-Doctoral Training, ASEA-UNINET, Graz University of Technology, Graz, Austria 2005 March 1

Post-Doctoral Training, UP-NSRI-DA-BAR, UP Diliman, Quezon City 2002 June 1

Post-Doctoral Training, JSPS, Sophia University, Tokyo, Japan 1999 November 15

## Papers Presented

- 2016 October Edañol, Y.D.G., Ferrer, M.R.R., Raguindin, R.K.M., & Arco, S.D. (2016 October). Potentiometric Determination of a Regulated Veterinary Drug via MIP-Modified Electrode, 5<sup>th</sup> International Conference on Materials Science and Engineering Technology.
- 2016 July Edañol, Y., Ferrer, M.R., Raguindin, R.K., & Arco, S. (2016 July). Synthesis and Characterization of a Molecularly Imprinted Polymer for Chloramphenicol via Precipitation Polymerization, 38<sup>th</sup> National Academy of Science and Technology Annual Scientific Meet.
- 2016 April Edañol, Y., Ferrer, M.R., Raguindin, R.K., & Arco, S. (2016 April). Potentiometric Determination of Chloramphenicol via MIP-modified Electrode, Philippine Chemistry Congress 2016.
- 2016 January Arco, S., Atayde, E., Jr., Gupit, C., Tolentino, M.N. (2016 January). Thermo-Responsive Block Copolymers of Ethylene Glycol Derivatives and Methacrylic Acid, Annual International Conference on Chemistry, Chemical Engineering and Chemical Process (CCECP 2016).
- 2013 Perez, S.J.L., & Arco, S. (2013). Solvent-Free Sonochemical Synthesis and Antifungal Activity of 1-Alkyl-3-Methylimidazolium Bromide [RMIM]Br Ionic Liquids, 35<sup>th</sup> Annual Scientific Meeting National Academy of Science and Technology, Manila Hotel.
- 2012 November 7-8 Tanguilan, G.E., Doliente, S.S., de Leon, R.L., Arco, S.D., & Escoto, M.T., Jr. (2012 November 7-8). Thermal conductivity enhancement of alumina nanoparticles in an aqueous [HMIM]LS solution, 19<sup>th</sup> Regional Symposium of Chemical Engineering, Bali, Indonesia.
- 2012 November 7-8 Doliente, S.S., Tanguilan, G.E., de Leon, R.L., & Arco, S.D. (2012 November 7-8). Stable aluminum oxide/water nanofluids with ionic liquid dispersant, 19<sup>th</sup> Regional Symposium of Chemical Engineering, Bali, Indonesia.

## Publications

- 2016 Lu, M.-C., Biel, L.C.C., Wan, M.-W., de Leon, R., Arco, S., & Futralan, C.M., Adsorption of dibenzothiophene sulfone from fuel using chitosan-coated bentonite (CCB) as biosorbent. *Desalination and water treatment*, 2016, 57(11):5108-5118.
- 2015 Vallo, L.L., Laxamana, R.T., Paredes, F.U., Arellano, I.H.J., & Arco, S.D., Harnessing non-covalent interactions in molecular traps for probable human carcinogen butylated hydroxyanisole. *Material Letters*, 2015, 159:317-320.
- Dimayacyac-Esleta, B.R.T., Tsai, C.-F., Kitata, R.B., Lin, P.-Y., Choong, W.-K., Lin, T.-D., Wang, Y.-T., Weng, S.-H., Yang, P.-C., Arco, S.D., Sung, T.-Y., & Chen, Y.-J., Rapid High-pH Reverse Phase StageTip for Sensitive Small-Scale Membrane Proteomic Profiling. *Analytical Chemistry*, 2015, 87(24):A-H.
- Carillo, K.D., Arco, S., Wang, C.-C., & Tzou, D.-L.M., Solid-state NMR investigation of effect of fluorination and methylation on prednisolone conformation. *Steroids*, 2015, 104:263-269.
- Kitata, R.B., Dimayacyac-Esleta, B.R.T., Choong, W.-K., Tsai, C.-F., Lin, T.-D., Tsou, C.-C., Weng, S.-H., Chen, Y.-J., Yang, P.-C., Arco, S.D., Nesvizhskii, A.I., Sung, T.-Y., & Chen, Y.-J., Mining Missing Membrane Proteins by High-pH Reverse Phase StageTip Fractionation and Multiple Reaction Monitoring Mass Spectrometry. *Journal of Proteome Research*, 2015, 14(9):3658-3669.
- 2014 Chang, C.-H., Lico, L.S., Huang, T.-Y., Lin, S.-Y., Chang, C.-L., Arco, S.D., & Hung, S.-C., Synthesis of the Heparin-Based Anticoagulant Drug Fondaparinux. *Angewandte Chemie International Edition*, 2014, 53(37):9876-9879.
- Perez, S.J.L.P., & Arco, S.D., Solvent-Free Sonochemical Synthesis and Antifungal Activity of 1-Alkyl-3-Methylimidazolium Bromide [RMIM]Br Ionic Liquids. *Journal of the Chinese Chemical Society*, 2014, 61(8):935-939.



- Lu, M.-C., Biel, L.C.C., Wan, M.-W., de Leon, R., & Arco, S., The Oxidative Desulfurization of Fuels with a Transition Metal Catalyst: A Comparative Assessment of Different Mixing Techniques. *International Journal of Green Energy*, 2014, 11(8):833-848.
- 2013 Ardoña, H.A.M., Paredes, F.U., Arellano, I.H.J., & Arco, S.D., Electrospun PET supported-ionic liquid-stabilized CdS catalyst for the photodegradation of Rhodamine B under visible light. *Materials Letters*, 2013, 91:96-99.  
Chiu, H.H.C., Arco, S.D., Ping, Z.C., & Villarante, N.R., Efficient Oxidative Desulfurization of Model Oil at Room Temperature with Ionic Liquid as Extraction Solvent. *Kimika*, 2013, 24(1):2-7.
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Wan, M.-W., Biel, L.C.C., Lu, M.-C., de Leon, R., & Arco, S., Ultrasound-assisted oxidative desulfurization (UAOD) using phosphotungstic acid: Effect of process parameters on sulfur removal. *Desalination and Water Treatment*, 2012, 47(1-3):96-104.  
Capangpangan, R.Y., del Mundo, F.R., Arco, S.D., Solis, J.S., & Obena, R.P., A Silver Ion Potentiometric Sensor Based on a Synthesized 1,3-Benzocrown Macrocyclic Diamide as Neutral Carrier. *Philippine Journal of Science*, 2012, 141(1):45-55.
- 2011 Arellano, I.H.J., Guarino, J.G., Paredes, F.U., & Arco, S.D., Thermal Stability and Moisture Uptake of 1-alkyl-3-methylimidazolium Bromide. *Journal of Thermal Analysis and Calorimetry*, 2011, 103:725-730.  
Obena, R.P., Lin, P.-C., Lu, Y.-W., Li, I.-C., del Mundo, F., Arco, S.D., Nuesca, G.M., Lin, C.-C., & Chen, Y.-J., Iron Oxide Nanomatrix Facilitating Metal Ionization in Matrix-Assisted Laser Desorption/Ionization Mass Spectrometry. *Analytical Chemistry*, 2011, 83:9337-9343.  
Lee, I.-C., Zulueta, M.M.L., Shie, C.-R., Arco, S.D., & Hung, S.-C., Deuterium-isotope study on the reductive ring opening of benzylidene acetals. *Organic and Biomolecular Chemistry*, 2011, 9:7655-7658.
- 2010 Obliosca, J.M., Arellano, I.H.J., Huang, M.H., & Arco, S.D., Double layer micellar stabilization of gold nanocrystals by greener ionic liquid 1-butyl-3-methylimidazolium lauryl sulfate. *Materials Letters*, 2010, 64:1109-1112.  
Obliosca, J.M., Arellano, I.H.J., Huang, M.H., & Arco, S.D., Morphogenesis of anisotropic gold nanostructures stabilized by the greener ionic liquid 1-butyl-3-methylimidazolium lauryl sulfate. *Philippine Science Letters*, 2010, 3(1):121-127.  
Amilasan, A.T., Solis, J.S., Arco, S.D., & Castriciones, E.V., Calorimetric Titration of Selected Divalent Transition Metal Cations with a Novel Macrocyclic Diamide. *Philippine Journal of Science*, 2010, 139(1):1-4.
- 2009 Arco, S.D., Laxamana, R.T., Geron, O.D., & Obliosca, J.M., Synthesis of [RMIM] Acetate Halogen-Free Ionic Liquids for Use as Greener Solvents in Diels-Alder Reaction. *Philippine Journal of Science*, 2009, 138(2):133-139.

- Capangpangan, R.Y., del Mundo, F.R., Arco, S.D., Solis, J.S., & Obena, R.P., Determination of Total Dissolved Silver in Photographic Film Wastewater Sample by Silver-ISE Based on a Newly Synthesized Macrocyclic Diamide as Ionophore. *Journal of Nature Studies*, 2009, 8(2):9-13.
- 2007 Obliosca, J.M., Arco, S.D., & Huang, M.H., Synthesis and Optical Properties of 1-Alkyl-3-Methylimidazolium Lauryl Sulfate Ionic Liquids. *Journal of Fluorescence*, 2007, 17(5):613-618.
- 2006 Tria, M.C.R., Endoma-Arias, M.A.A., Arco, S.D., & Perez, G.G., Synthesis of Diester Phthalates with Potential Antidiarrheal Activities. *The Philippine Agricultural Scientists*, 2006, 89(4):319-325.
- Arco, S.D., & Miranda, J.T., Design and Synthesis of Chiral Lewis Acid Catalysts for Aqueous Diels-Alder and Barbier Type Reactions. *Kimika*, 2006, 22(1):33-42.
- 2004 Arco, S.D., & Sumera, F.C., Pimaric Acid from Manila Elemi derived from *Canarium luzonicum* as a resolving agent in the resolution of racemic compounds. *Kimika*, 2004, 20(1-2):29-35.
- 2003 Endoma-Arias, M.A.A. Tria, M.C.P., & Arco, S.D., An approach to optically active ibuprofen through whole-cell and enzyme-catalyzed transformations. *Kimika*, 2003, 19(2):69-75.
- Endoma-Arias, M.A.A., Arco, S.D., & Tria, M.C.R., Studies on the lipase-catalyzed resolution of amino alcohols and its applications to the total synthesis of the antituberculous drug ethambutol. *Kimika*, 2003, 19(1):17-22.
- 2002 Arco, S.D., Miranda, J.T., Leaño, J.L., & Villanueva, M.U., Aqueous Diels-Alder Methodology toward some Selected Monoterpenes. *Kimika*, 2002, 18(1):1-4.
- 2001 Arco, S.D., Miranda, J.T., & Vitalicia, M.E., 1-4-Aqueous Diels-Alder as an Alternative Approach to the Anthraquinone Backbone. *Kimika*, 2001, 17(2):71-74.
- 1997 Shaw, H., Perlmutter, H.D., Gu, C., Arco, S.D., & Quibuyen, T.A.O., Free Radical Bromination of Selected Organic Compounds in Water. *Journal of Organic Chemistry*, 1997, 62(2):236-237.

**Name** Ian Harvey Juralbal Arellano

**Gender** Male

**Organizational Affiliations**

Chief Materials Development Engineer, Centre for Molecular and Material Sciences, University of South Australia, Adelaide, Australia

**Education**

Doctor of Philosophy in Chemistry, University of South Australia, Adelaide, South Australia 2015

Master of Science in Chemistry, University of the Philippines, Diliman, Quezon City 2008

Bachelor of Science in Chemistry, University of the Philippines, Diliiman, Quezon City 2005

**Fields of Specialization**

Material Science

Inorganic Chemistry

Nanostructures

Adsorption

Physical Chemistry

Green Chemistry

Surface Chemistry

Carbon dioxide Capture

Nanocrystals

Interface Science

X-ray Reflectometry

Spectroscopy

Density Functional Theory (DFT) Calculations

Neutron Reflectometry

Small Angle Neutron Scattering

Molecular Simulation

**Employment**

Chief Engineer - New Materials Development, STMicroelectronics, 2016 January-Present

Academic Tutor, University of South Australia, 2013 August-2015 June

Researcher/PhD Student, CSIRO, 2012 April-2015 September

Senior Materials Development Engineer, STMicroelectronics, 2009 January-2012 March

Lecturer, Mapua Institute of Technology - School of Graduate Studies (GS)  
Manila, Philippines, 2008 July-2010 June

Instructor, Institute of Chemistry, University of the Philippines, 2005 June-2008  
December

### **Association Membership**

Member, Microscopy Society of the Philippines

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

Member, Materials Research Society - Singapore

Member, National Research Council of the Philippines

Member, Royal Society of Chemistry

### **Honors / Awards**

Grant: Beamtime, Australian Nuclear Science and Technology Organization 2015 July

Grant: Beamtime, Australian Nuclear Science and Technology Organization 2015 April

Grant: Beamtime, Australian Nuclear Science and Technology Organization 2015  
March

Grant: Beamtime, Australian Nuclear Science and Technology Organization 2014  
December

Grant: Beamtime, Australian Nuclear Science and Technology Organization 2014  
September

International President's Scholarship, University of South Australia 2012 March

Scholarship: CSIRO Postgraduate Studenship, CSIRO 2012 March

Robert Bosch Stiftung Fellowship, 4<sup>th</sup> EuroScience Open Forum 2010 August

Grant: The 60<sup>th</sup> Meeting of the Nobel Laureates, Lindau Nobel Laureate Meetings 2010  
July

Japan Society for the Promotion of Science Fellowship, 2<sup>nd</sup> HOPE Meeting with Nobel  
Laureates 2009 October

International Publication Award, University of the Philippines 2008

Outstanding Thesis in Advanced Science and Technology, Philippine Council for  
Advanced Science and Technology Research and Development 2008 December

Grant: IUPAC Fellowship for Young Chemist, International Union of Pure and Applied  
Chemistry 2007 July

Accelerated Science and Technology Human Resource Development Program  
(ASTHRDP) Scholarship, Graduate Scholarships, Department of Science and  
Technology, Philippines 2006 June

Leticia Shahani Best Undergraduate Thesis, University of the Philippines 2005 April

Undergraduate Scholarship, Science and Technology Undergraduate Scholarships,  
Department of Science and Technology, Philippines 2001 June

## Papers Presented

- 2016 November Arellano, I.H.J., & Zapanta, A. (2016 November). Evolution of the topographical and chemical signatures of plasma-treated surfaces along the staging time pathway, 2016 IEEE 18<sup>th</sup> Electronics Packaging Technology Conference (EPTC).
- 2016 November 30 - 2016 December 3 Cabading, P., Malabanan, S., Llana, F.A., Garcia, L., & Arellano, I.H. (2016 November 30 - 2016 December 3). Systematic approach in testing the viability of mechanical partial-cut singulation process towards tin-plateable sidewalls for wettable flank on automotive QFN technology, 2016 IEEE 18<sup>th</sup> Electronics Packaging Technology Conference (EPTC).
- 2015 July 20-23 Arellano, I.H., Huang, J., & Pendleton, P. (2015 July 20-23). Confinement of zinc-functionalized ionic liquid into highly ordered mesoporous silica promotes high CO<sub>2</sub> sorption capacity and kinetics, 12<sup>th</sup> International Conference on Materials Chemistry, University of York, York, United Kingdom.
- 2015 July 20-23 Arellano, I.H., Madani, H., Nelson, A., & Pendleton, P. (2015 July 20-23). Water-induced perturbations on the interfacial structure of hydrophobic ionic liquid: X-ray reflectometry analyses, 12<sup>th</sup> International Conference on Materials Chemistry, University of York, York, United Kingdom.
- 2014 September 28 - October 1 Arellano, I.H., Madani, S.H., Huang, J., & Pendleton, P. (2014 September 28 - October 1). Porous silica spheres-supported Zn-functionalized ionic liquid as sorbents for CO<sub>2</sub> capture, 4<sup>th</sup> Asia-Pacific Conference on Ionic Liquids and Green Processes / 6<sup>th</sup> Australasian Symposium on Ionic Liquids, At Sydney, Australia.
- 2013 April Liu, H., Huang, J., Arellano, I.H.J., Warden, A., & Pendleton, P. (2013 April). Capturing the Influence of Zn (II) Ions on Anhydrous [Emim][Tf<sub>2</sub>N] Ionic Liquid for CO<sub>2</sub> Absorption Using pPC-SAFT, Conference on Ionic Liquid 5, Algarve, Portugal.
- 2013 April Huang, J., Liu, H., Arellano, I.H.J., Rosamilia, A.E., Warden, A., & Pendleton, P. (2013 April). Ionic Liquids Containing Transition Metal Functional Groups for CO<sub>2</sub> Capture, Conference on Ionic Liquid 5, Algarve, Portugal.

## Publications

- 2016 Arellano, I.H., & Zapanta, A., Evolution of the topographical and chemical signatures of plasma-treated surfaces along the staging time pathway. Proceedings of the 2016 IEEE 18th Electronics Packaging Technology Conference, 2016.  
Cabading, P., Malabanan, S., Llana, F.A., Garcia, L., & Arellano, I.H., Systematic approach in testing the viability of mechanical partial-cut singulation process towards tin-plateable sidewalls for wettable flank on automotive QFN technology. Proceedings of the 2016 IEEE 18th Electronics Packaging Technology Conference, 2016.  
Arellano, I.H., Antilano, E., Jr., & Zapanta, A., Insights into the behavior of Sn on NiPdAu surface: Diffusion energetics in complex multilayered surfaces. Materials Letter, 2016.
- 2015 Arellano, I.H., Huang, J., & Pendleton, P., Synergistic enhancement of CO<sub>2</sub> uptake in highly ordered mesoporous silica-supported zinc-functionalized ionic liquid sorbents. Chemical Engineering Journal, 2015, 281:119-125.  
Arellano, I.H., Huang, J., & Pendleton, P., Confinement of zinc-functionalized ionic liquid into highly ordered mesoporous silica promotes high CO<sub>2</sub> sorption capacity and kinetics. 12<sup>th</sup> International Conference on Materials Chemistry Book of Abstracts, At University of York, York, United Kingdom, 2015:P274.  
Arellano, I.H., Madani, S.H., Nelson, A., & Pendleton, P., Water-induced perturbations on the interfacial structure of hydrophobic ionic liquid: X-ray

- reflectometry analyses. 12<sup>th</sup> International Conference on Materials Chemistry Book of Abstracts, At University of York, UK, 2015.
- Arellano, I.H.J., Huang, J., & Pendleton, P., High capacity CO<sub>2</sub> sorbents based on zinc-functionalized ionic liquid confined in morphologically diverse porous matrices. *Royal Society of Chemistry Advances*, 2015, 5:65074-65083.
- Arellano, I.H., Madani, S.H., Huang, J., & Pendleton, P., Carbon dioxide adsorption by zinc-functionalized ionic liquid impregnated into bio-templated mesoporous silica beads. *Chemical Engineering Journal*, 2015, 283:692-702.
- Arellano, I.H., Huang, J., & Pendleton, P., Computational insights into the molecular interaction and ion-pair structures of a novel zinc-functionalized ionic liquid, [Emim][Zn(TFSI)<sub>3</sub>]. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, 2015, 153:6-15.
- Arellano, I.H., & Pendleton, P., Phenomenological analyses of carbon dioxide adsorption kinetics on supported zinc-functionalized ionic liquid hybrid sorbents. *Chemical Engineering Journal*, 2015, 288:255-263.
- Vallo, L.L., Laxaman, R.T., Paredes, F.U., & Arellano, I.H.J., Harnessing non-covalent interactions in molecular traps for probable human carcinogen butylated hydroxyanisole. *Materials Letters*, 2015, 159:317-320.
- 2014 Arellano, I.H., Madani, S.H., Huang, J., & Pendleton, P., Porous silica spheres-supported Zn-functionalized ionic liquid as sorbents for CO<sub>2</sub> capture. *Proceedings of the 4<sup>th</sup> Asia-Pacific Conference on Ionic Liquids and Green Processes / 6<sup>th</sup> Australasian Symposium on Ionic Liquids*, At Sydney, Australia, 2014.
- Mohsin, S., Arellano, I.H., Choudhury, N.R., & Garg, S., Docetaxel epimerization in silicone films: A case of drug excipient incompatibility. *Drug Testing and Analysis*, 2014, 6:1076-1084.
- Ladaga, A.Z., Manalang, K.V., Romero, I., Sy, J.A., Arellano, I.H., & Basilia, B., Ethylenediamine and ethylene glycol stabilized colloidal PbX (X=S, Se, Te) nanocrystals via amide- and ester-derivatives of 1-(propanoic acid)-3-methylimidazolium bromide ionic liquid. *Materials Letters*, 2014, 136:420-423.
- 2013 Ardoña, H.A.M., Paredes, F.U., Arellano, I.H.J., & Arco, S.D., Electrospun PET supported-ionic liquid-stabilized CdS catalyst for the photodegradation of Rhodamine B under visible light. *Materials Letters*, 2013, 91:96-99.
- Que, M.C.O., Montesa, M., Sy, J.A., Basilia, B.A., & Arellano, I.H.J., Facile *in situ* thermolytic growth of ZnS quantum dots in polystyrene matrix from zinc pyrrolidinedithiocarbamate as single source precursor. *Materials Letters*, 2013, 109:186-189.
- 2011 Arellano, I.H.J., Guarino, J.G., Paredes, F.U., & Arco, S.D., Thermal stability and moisture uptake of 1-alkyl-3-methylimidazolium bromide. *Journal of Thermal Analysis and Calorimetry*, 2011, 103:725-730.
- 2010 Obliosca, J.M., Arellano, I.H.J., Huang, M.H., & Arco, S.D., Double layer micellar stabilization of gold nanocrystals by greener ionic liquid 1-butyl-3-methylimidazolium lauryl sulfate. *Materials Letters*, 2010, 64:1109-1112.
- Arellano, I.H.J., Mangadlao, J., Ramiro, I.B., & Suazo, K.F., 3-component low temperature solvothermal synthesis of colloidal cadmium sulfide quantum dots. *Materials Letters*, 2010, 64(6):785-788.
- Obliosca, J.M., Arellano, I.H.J., Huang, M.H., & Arco, S.D., Morphogenesis of anisotropic gold nanostructures stabilized by the greener ionic liquid 1-butyl-3-methylimidazolium lauryl sulfate. *Philippine Science Letters*, 2010, 3(1):121-127.
- 2009 Arellano, I.H.J., & Payawan, L.M., Photocatalytically Efficient Zinc Oxide Microstructural Assembly. In *Environmental Issues and Waste Management Technologies in the Materials and Nuclear Industries XII* (eds A. Cozzi and T. Ohji),

John Wiley & Sons, Inc., Hoboken, NJ, USA, 2009:doi:  
10.1002/9780470538371.ch29.

2008

Arellano, I.H.J., Payawan, L.M., Jr., & Sarmago, R.V., Crystal habit dependent quantum confined photoluminescence of zinc oxide nanostructures. Philippines: Kapisanang Kimika ng Pilipinas (Chemical Society of the Philippines), 2008.  
Magdaluyo, E.R., Jr., Arellano, I.H.J., Tapia, A.K.G., Sarmago, R.V., & Payawan, L.M., Photoluminescence and Fractal Properties of Diverse Carbothermal Zinc Oxide Nanostructures. *Advanced Materials Research*, 2008, 31:92-94.

**Name** Ma. Carmencita B. Arpa

**Gender** Female

**Education**

Master of Science in Geological Sciences, Michigan State University, East Lansing, Michigan, United States 2005

Bachelor of Science in Geology, University of the Philippines, Diliman, Quezon City 1996

**Fields of Specialization**

Volcanology

Seismology

Disaster Mitigation

Geology

Geochemistry

Petrology

Stratigraphy

**Employment**

Science Research Specialist, Philippine Institute of Volcanology and Seismology, Department of Science and Technology (DOST-PHIVOLCS), 1997 March-2013 June

**Publications**

- 2013 Arpa, M.C., Hernández, P.A., Padrón, El, Reniva, P., Padilla, G.D., Bariso, E., Melián, G.V., Barrancos, J., Nolasco, D., Calvo, D., Pérez, N.M., & Solidum, R.U., Jr., Geochemical evidence of magma intrusion inferred from diffuse CO<sub>2</sub> emissions and fumarole plume chemistry: The 2010-2011 volcanic unrest at Taal Volcano, Philippines. *Bulletin of Volcanology*, 2013, 75(10):747.
- 2012 Schwandner, F.M., Hidayat, D., Laguerta, E.P., Baloloy, A.V., Valerio, R., Vaquilar, R., Arpa, M.C., Marcial, S.S., & Novianti, M.L., A multidisciplinary monitoring network at Mayon volcano, Philippines: A collaborative effort between PHIVOLCS and EOS. *Geophysical Research Abstracts*. EGU General Assembly., 2012, 14.
- 2011 Okuno, M., Laguerta, E., Delos Reyes, P., Bornas, M.A., Mirabueno, M.H., Arpa, M.C.B., Bariso, E.B., Solidum, R., Jr., Taguchi, S., Torii, M., & Kobayashi, T., Eruptions of Bulusan Volcano since November 2010. *Journal of the Geological Society of Japan*, 2011, 117(12):XIV.
- 2010 Lit, C.C., Catane, S., Teves, J., Tejada, M.G., Mandanas, A.A., Fernando, A., Mirabueno, M.T., Arpa, M.C.B., Bringas, C.L., Escobar, K., Sobrepena, K., & Abuda, J., 6 ka tephra from Sibuyan Sea, Philippines: Geochemical characteristics and its effects on planktonic foraminifera. *American Geophysical Union*, 2010.  
Mandanas, A.A., Tejada, M.G., Catane, S., Teves, J., Arpa, M.C.B., Mirabueno, M.T., Bringas, C.L., Lit, C.C., & Solidum, R.U., Eastern Luzon Arc Affinity of Benham Rise Tephra from Major Element Chemistry of MD06-3047 Glasses. *AGU Fall Meeting Abstracts*, San Francisco, CA, USA, 2010.
- 2008 Arpa, M.C.B., Patino, L.C., & Vogel, T.A., The basaltic to trachydacitic upper Diliman Tuff in Manila: Petrogenesis and comparison with deposits from Taal and Laguna Calderas. *Journal of Volcanology and Geothermal Research*, 2008, 177:1020-1034.



- 2006 Vogel, T.A., Flood, T.P., Patino, L.C., Wilmot, M.S., Maximo, R.P.R., Arpa, C.B., Arcilla, C.A., & Stimac, J.A., The origin of the silicic domes in the Macolod Corridor, Philippines. *Contributions to Mineralogy and Petrology*, 2006, 151:267-281.
- Arpa, M.C.B., Bornas, M.A.V., Abigania, M.I.T., Solidum, R.U., Listanco, E.L., Ozawa, A., & Tagami, T., Characterization of lava flow and pyroclasts from the February to March 2000 eruption of Mayon Volcano, Philippines. *Journal of the Geological Society of the Philippines*, 2006, 61:1-19.
- Vogel, T.A., Flood, T.P., Patino, L.C., Wilmot, M.S., Maximo, R.P.R., Arpa, C.B., Arcilla, C.A., & Stimac, J.A., Geochemistry of silicic magmas in the Macolod Corridor, SW Luzon, Philippines: Evidence of distinct, mantle-derived, crustal sources for silicic magmas. *Contributions to Mineralogy and Petrology*, 2006, 151:267-281.
- 2005 Arpa, M.C.B., Geochemistry of the Upper Diliman Tuff Unit in Manila, Southwest Luzon, Philippines: Insights on Its Origin and Comparison with Taal and Laguna Caldera Pyroclastic Flows. Thesis (M.S.) -- Michigan State University, Department of Geological Sciences, 2005:p160.
- 2004 Flood, T.P., Vogel, T.A., Arpa, M.B., Patino, L.C., Cantane, S.G., & Arcilla, C.A., Silicic Magmas Erupted From the Laguna de Bay Caldera, Macolod Corridor, Luzon, Philippines: Geochemistry and Origin. American Geophysical Union, 2004.
- Ozawa, A., Tagami, T., Listanco, E.L., Arpa, C.B., & Sudo, M., Initiation and propagation of subduction along the Philippine Trench: Evidence from the temporal and spatial distribution of volcanoes. *Journal of Asian Earth Sciences*, 2004, 23(1):105-111.
- Arpa, M.B., Vogel, T.A., Flood, T.P., Patino, L.C., & Catane, S.G., Geochemistry of pyroclastic deposits in Metro Manila, Philippines: insight on volcanic source. American Geophysical Union, 2004.
- 2003 Wilmot, M.S., Flood, T.P., Patino, L.C., Vogel, T.A., Arpa, C.B., Arcilla, C., & Maximo, R.P., Explosive and Effusive Silicic Magmatism in the Macolod Corridor, Luzon Islands, Philippines. American Geophysical Union, 2003.

**Name** Eufrocina P. Atabay

**Gender** Female

**Organizational Affiliations**

Supervising Science Research Specialist /Head, Reproductive Biotechnology Laboratory, Philippine Carabao Center, National Headquarters, Science City of Munoz, Nueva Ecija

**Education**

Doctor of Philosophy in Veterinary Medicine, Hokkaido University, Japan 2001

**Fields of Specialization**

Plant & Animal Science

Pharmacology

Animal Production

Animal Biotechnology

Animal Biology

Animal Science

Animal Physiology

Animal Reproduction

Genetics of Physiology of Livestock

Animal Breeding

**Association Membership**

Regular Member, National Research Council of the Philippines (NRCP)

**Honors / Awards**

Best Paper In Applied Research, "Use of Optimized Extenders In The Cryopreservation Of Goat Semen for Artificial Insemination-1.", Society of Animal Science and Asian Reproductive Biotechnology 2012 October 20-28

Fulbright-DA Philippines Scholarship Grant to undergo Advance Research on Animal Reproductive Biotechnology, Fulbright and Department of Agriculture 2012 January 20 - July 21

Second Place, Basic Research Category, 22<sup>nd</sup> Regional Symposium on Research and Development CLARRDEC 2011

Silver Award (2<sup>nd</sup> place, Basic Research Category), 23<sup>rd</sup> National Research Symposium-Bureau of Agricultural Research - Department of Agriculture 2011 October 6-7

PSAS Best Paper Award under Physiology and Anatomy Category, PSAS Convention in Cebu City 2009 October 21-23

**Trainings**

Information Seminar on Agricultural Biotechnology for DA Public Information Officers, Punta Villa Resort, Iloilo City 2012 November 8

Information Seminar on Agricultural Biotechnology for Rural Broadcasters (Visayas & Mindanao Chapter), Cebu City 2012 November 20

Information Seminar on Agricultural Biotechnology for Rural Broadcasters (Luzon Chapter), Philippine Carabao Center, Science City of Munoz, Nueva Ecija 2012 November 14

Joint Conference of the Philippine Society of Animal Science & 9th Asian Reproductive Biotechnology, Shangri-La Hotel, Manila 2012 October 20

46<sup>th</sup> Scientific Seminar and Annual Convention of the Philippine Society of Animal Science, Cebu, Philippines 2009 October 20

## Researches

### Completed

The effects of holding water Buffalo and Bovine Ovaries at various temperatures during transport and storage on in vitro embryo Production

Ultra rapid vitrification of in-vitro matured Buffalo oocytes by minimum volume cooling methods

Enhancing Cryoviability of in vivo-derived goat embryos by optimizing embryonic stage and in-vitro culture of Morula to Blastocyst Before Freezing

Cryopreservation of in-vitro matured Buffalo Oocytes by Slow Freezing and Vitrification Methods

Viability of Goat Embryos Maintained at Portable Incubator during Transit for Embryo Transfer

## Papers Presented

- 2013 January Ocampo, M.B., Pedro, P.B., Duran, P.G., Atabay, E.P., Maylem, E.R.S., Aquino, F.P., Ocampo, L.C., & Cruz, L.C. (2013 January). L-Carnitine Influences the Developmental Competence of Buffalo Oocytes from Aged Donors, 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress, Volume: 32.
- 2013 January Ocampo, L.C., Duran, D.H., Pedro, P.B., Aquino, F.P., Atabay, E.P., Ocampo, M.B., Maylem, E.R.S., Duran, P.G., & Cruz, L.C. (2013 January). Developmental Competence of Water Buffalo Oocytes In Vitro in Single Base Medium-Synthetic Oviductal Fluid, 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress, Volume: 32.
- 2013 January Atabay, E.P., Atabay, E.C., & Cruz, L.C. (2013 January). The Carabao Development Program as the Cornerstone of the Livestock Biotechnology Program in the Philippines, 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress, Volume: 32.
- 2013 January Ocampo, M.B., Pedro, P.B., Duran, P.G., Atabay, E.P., Maylem, E.R.S., Aquino, F.P., Ocampo, L.C., & Cruz, L.C. (2013 January). ART's for in vitro Production of Buffalo Embryos (Philippine experience), 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress, Volume: 32.
- 2012 November 8-10 Atabay, E.P. (2012 November 8-10). Livestock Biotechnology: Current R&D Program and Direction Presented during the, Information Seminar on Agricultural Biotechnology for DA Public Information Officers in line with the celebration of National Biotechnology 2012 at Punta Villa Resort, Iloilo City.
- 2012 November 14-15 Atabay, E.P. (2012 November 14-15). Livestock Biotechnology: Current R&D Program and Direction, Information Seminar on Agricultural Biotechnology for Rural Broadcasters (Luzon Chapter) in line National Biotechnology at Philippine Carabao Center, Science City of Munoz, Nueva Ecija.

- 2012 November 20-21 Atabay, E.P. (2012 November 20-21). Livestock Biotechnology: Current R&D Program and Direction, Information Seminar on Agricultural Biotechnology for Rural Broadcasters (Visayas and Mindanao Chapters) in line with the celebration of National Biotechnology 2012 at Cebu City.
- 2011 Atabay, E.P. (2011). Cryopreservation of In Vitro Matured Buffalo (*Bubalus bubalus*) Oocytes by Slow Freezing or Vitrification, Manila.
- 2010 Atabay, E.P. (2010). Production of Nuclear Transfer Buffalo Embryos Using Oocytes Stored at Low Temperatures, Kuala Lumpur.
- 2010 Atabay, E.P. (2010). Effect of Holding Water Buffalo and Bovine Ovaries at Various Temperatures During Transport and Storage on In Vitro Embryo Production, Kuala Lumpur.
- 2009 Atabay, E.P., Atabay, E.C., de Vera, R.V., Aquino, F.P., Duran, D.H., & Cruz, L.C. (2009). The Effects of Holding Water Buffalo and Bovine Ovaries at Various Temperatures during Transport and Storage on *in vitro* Embryo Production, Annual Scientific Convention of the Philippine Society of Animal Science.
- 2009 Atabay, E.P. (2009). Selection of Water buffalo Oocytes with Developmental Competence *In Vitro*, Cebu City.

## Publications

- 2016 Ishihara, S., Ishida, A., Del Barrio, A.N., Lapitan, R.M., Atabay, E., Boyles, R.M., Salac, R.L., De Leon, J.L., Eduarte, M.M., Cruz, L.C., Kanai, Y., Field survey on Tamaraw (*Bubalus mindorensis*) - Present population size and herd behavior in wild. *Italian Journal of Animal Science*, 2010, 6:1249-1251.  
Atabay, E.C., Atabay, E.P., Duran, D.H., De Vera, R.V., Mamuad, F.V., & Cruz, L.C., Comparison of in vitro fertilization and nuclear transfer techniques in the production of buffalo pre-implantation embryos. *Italian Journal of Animal Science*, 2016, 246-252.  
Atabay, E.C., & Atabay, E.P., Production of Water Buffalo Clone Embryos Using Ear Skin Fibroblasts as Donor Cell in Nuclear Transfer. *Philippine Journal of Veterinary Medicine*, 2016, 53(2):126-134.
- 2015 Ishihara, S., Boyles, R.M., Matsubayashi, H., Del Barrio, A.N., Cebrian, M.R., Ishida, A., Lapitan, R.M., Atabay, E.P., & Cruz, L.C., Long-term community-based monitoring of tamaraw *Bubalus mindorensis* on Mindoro Island, Philippines. *Oryx - The International Journal of Conservation*, 2015, 49(2):352-359.
- 2014 Aquino, F.P., & Atabay, E.P., In Vitro Embryo Transfer of Bubaline Embryos using Oocytes Derived from Transvaginal Ultrasound-Guided Follicular Aspiration (TUFA). *International Journal of Applied Sciences and Biotechnology*, 2014, 2(2):180-184.
- 2013 Atabay, E.P., Atabay, E.C., & Cruz, L.C., Cryotop and Solid Surface Vitrification Cryodevices are Suitable for the Cryopreservation of *In Vitro*-Matured Water Buffalo (*Bubalus bubalis* L.) Oocytes. *Philippine Journal of Veterinary Medicine*, 2013, 50(1):24-33.  
Beltran, M.A.G., Atabay, E.P., Atabay, E.C., Cruz, E.M., Aquino, F.P., & Cruz, L.C., Optimized Extenders for Cryopreservation of Buck Semen for artificial Insemination. *Philippine Journal of Veterinary and Animal Sciences*, 2013, 39(1):1-10.  
Atabay, E.C., Atabay, E.P., Aquino, F.P., Duran, P.G., Pedro, P.B., & Cruz, L.C., Somatic Cell Nuclear Transfer as a Tool for the Multiplication of Genetically Superior Water Buffaloes: The Philippine Initiatives. *Buffalo Bulletin*, 2013, 32(2):556-559.  
Pedro, P.B., Atabay, E.P., Atabay, E.C., Aquino, F.P., Ocampo, M.B., Maylem, E.R., & Cruz, L.C., Blastocyst Formation after Intracytoplasmic Sperm Injection in Bovine

- and Buffalo Oocytes Derived from Slaughter House. *Buffalo Bulletin*, 2013, 32(2):552-555.
- Ocampo, M.B., Pedro, P.B., Duran, P.G., Atabay, E.P., Maylem, E.R.S., Aquino, F.P., Ocampo, L.C., & Cruz, L.C., L-Carnitine Influences the Developmental Competence of Buffalo Oocytes from Aged Donors. *Proceedings of the 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress*, 2013, 32.
- Ocampo, L.C., Duran, D.H., Pedro, P.B., Aquino, F.P., Atabay, E.P., Ocampo, M.B., Maylem, E.R.S., Duran, P.G., & Cruz, L.C., Developmental Competence of Water Buffalo Oocytes In Vitro in Single Base Medium-Synthetic Oviductal Fluid. *Proceedings of the 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress*, 2013, 32.
- Atabay, E.P., Atabay, E.C., & Cruz, L.C., The Carabao Development Program as the Cornerstone of the Livestock Biotechnology Program in the Philippines. *Proceedings of the 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress*, 2013, 32.
- Ocampo, M.B., Pedro, P.B., Duran, P.G., Atabay, E.P., Maylem, E.R.S., Aquino, F.P., Ocampo, L.C., & Cruz, L.C., ART's for in vitro Production of Buffalo Embryos (Philippine experience). *Proceedings of the 10<sup>th</sup> World Buffalo Congress / 7<sup>th</sup> Asian Buffalo Congress*, 2013, 32.
- Beltran, M.A.G., Atabay, E.P., Atabay, E.C., Cruz, E.M., Aquino, F.P., & Cruz, L.C., Optimized Extenders for Cryopreservation of Buck Semen for Artificial Insemination. *Philippine Journal of Veterinary and Animal Sciences*, 2013, 39(1):1-10.
- 2012 Atabay, E.C., Atabay, E.P., Beltran, M., Aquino, F., & Cruz, L., Cryopreservation of Goat Semen for Artificial Insemination and In-Vitro-Embryo Production. *Proceedings of the Joint Conference of the Philippine Society of Animal Science and 9<sup>th</sup> Asian Reproductive Biotechnology at Shangri-La Hotel, Manila*.
- 2011 Atabay, E.C., Atabay, E.P., de Vera, R.V., Aquino, F.P., & Cruz, L.C., Production of Nuclear Transfer Buffalo Embryos Using Oocytes from Ovaries Stored at Low Temperatures. *Philippine Journal of Veterinary and Animal Sciences*, 2011, 37(1):1-10.
- Atabay, E.C., Atabay, E.P., Mamuad, F.V., & Cruz, L.C., Chemical and Electrical Activation of Swamp Buffalo (*Bubalus bubalis*) Oocytes for the Production of Parthenogenetic Embryos *In-Vitro*. *Philippine Journal of Veterinary Medicine*, 2011, 48(1):43-48.
- 2010 Atabay, E.P., Edwin C. Atabay, E.C., Aquino, F.P., Duran, D.H., de Vera, R.V., & Cruz, L.C., Cryopreservation of *In Vitro* Matured Buffalo (*Bubalus bubalis*) Oocytes by Slow Freezing or Vitrification. *Philippine Journal of Veterinary Medicine*, 2010, 47(2):103-109.
- Atabay, E. P., Atabay, E. C., de Vera, R. V., Aquino, F. P., Duran, H. D., & Cruz, L. C., Effect of Holding Water Buffalo and Bovine Ovaries at Various Temperatures During Transport and Storage on In Vitro Embryo Production. *Philippine Journal of Veterinary and Animal Sciences*, 2010, 36(1):81-93.
- Atabay, E.P., Atabay, E.C., de Vera, R.V., Aquino, F.P., Duran, D.H., & Cruz, L.C., Effects of Holding Water Buffalo and Bovine Ovaries at Various Temperatures during Transport and Storage on *In Vitro* Embryo Production. *Philippine Journal of Veterinary and Animal Sciences*, 2010, 36(1):81-93.
- 2008 Atabay, E.P., Atabay, E.C., Duran, P.G., Flores, E.B., Abesamis, A.F., Jr., & de Vera, R.V., Production of Embryos from Prepuberal Buffaloes using Ultrasound-Guided Ovum Pick Up And In-Vitro Embryo Production (OPU-IVEP) Techniques. *Philippine Journal of Veterinary and Animal Sciences*, 2008, 34(1):55-65.
- Duran, D.H., Atabay, E.P., Duran, P.G., Atabay, E.C., Takahashi, Y., & Kanai, Y., Selection of Water Buffalo Oocytes with Developmental Competence In Vitro. *Philippine Journal of Veterinary and Animal Sciences*, 2008, 34(2):149-158.

- 2007 Nagano, M., Atabay, E.P., Atabay, E.C., Mitsugu Hishinuma, M., Katagiri, S., Takahashi, Y., Effects of isolation method and pre-treatment with ethylene glycol or raffinose before vitrification on in vitro viability of mouse preantral follicles. Biomedical Research-tokyo, 2007, 28(3):153-160.  
Atabay, E.C., Atabay, E.P., Duran, D.H., de Vera, R.V., Mamuad, F.V., & Cruz, L.C., Comparison of In Vitro Fertilization and Somatic Cell Nuclear Transfer Techniques in Producing Buffalo Pre-Implantation Embryos. Philippine Journal of Veterinary and Animal Sciences, 2007, 33(1):29-37.
- 2006 Atabay, E.P., Atabay, E.C., Duran, D.H., de Vera, R.V., & Cruz, L.C., Enhanced Developmental Competence of Buffalo Oocytes in the Presence of Hormone and Epidermal Growth Factor during In Vitro Maturation. Philippine Journal of Veterinary and Animal Sciences, 2006, 32(2):155-166.
- 2003 Atabay, E.C., Atabay, E.P., Kanai, Y., Takahashi, Y., Katagiri, S., & Nagano, M., Development of Nuclear Transfer Embryos Constructed With Bovine or Bubaline Fibroblasts and Vitrified Bovine Oocytes. Philippine Journal of Veterinary and Animal Sciences, 2003, 29(1):16-24.  
Atabay, E.P., Atabay, E.C., Takahashi, Y., Katagiri, S., & Nagano, M., Vitrification of Mouse Preantral Follicles Using a Mixture of Ethylene Glycol and Raffinose. Philippine Journal of Veterinary and Animal Sciences, 2003, 29(2):10-19.

**Name** Johnrob Yap Bantang

**Gender** Male

**Organizational Affiliations**

Associate Professor, National Institute of Physics (NIP), National Science Complex, College of Science, University of the Philippines, Diliman, Quezon City

**Education**

Doctor of Philosophy in Physics, University of the Philippines Diliman, Quezon City, Diliman, Quezon City, Philippines April 2006

Master of Science in Physics, University of the Philippines Diliman, Quezon City, Diliman, Quezon City, Philippines April 2002

Bachelor of Science in Applied Physics, University of the Philippines Diliman, Quezon City, Diliman, Quezon City, Philippines April 2000

**Fields of Specialization**

Applied Physics

Complex systems

Granular matter mixing

Segregation

Heap stability

Cellular automata model of dynamical system

Chaotic systems

Complex networks and social dynamics

Ordinary differential equation model of virus-cell interaction

Membrane system

Network Biology

Complex Networks

Stochastic Processes

Granular Matter

Statistics

Probability

Neuron

Data Analysis

Biophysics

Computational Physics

Epidemiology

## **Employment**

Associate Professor, National Institute of Physics, University of the Philippines, 2015 January-Present

Coordinator, Instrumentation Physics Laboratory, 2014 June-2014 December

Officer-In-Charge as Dep. Director for Facilities and Resources, National Institute of Physics, University of the Philippines, 2014 April-2014 June

Coordinator, Physics 10 Course Group, 2013 June-2014 December

Director, University Computer Center, University of the Philippines, 2011 June-2014 May

Assistant Professor, National Institute of Physics, University of the Philippines, 2006 June-2015 December

Information Management Committee Vice-Chair, National Institute of Physics, University of the Philippines, 2005 June-2007 May

Course group leader, Physics 71 Laboratory Group, 2002 November-2003 March

Systems and Network Administrator, Institute level, 2002 June-2005 May

Student Assistant, Instrumentation Physics Laboratory Group, 1998 June-2000 May

## **Association Membership**

University Assistant Professor 6, National Institute of Physics / College of Science, University of the Philippines Diliman

Lecturer, part-time, Miriam College Katipunan Avenue Quezon City, Philippines

University Assistant Professor 5, National Institute of Physics / College of Science, University of the Philippines Diliman

University Assistant Professor 3, National Institute of Physics / College of Science, University of the Philippines Diliman

Postdoctoral fellow, Max Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Germany

Lecturer, part-time, Miriam College Katipunan Avenue Quezon City, Philippines

University Instructor 7, National Institute of Physics / College of Science, University of the Philippines Diliman

University Instructor 3, National Institute of Physics / College of Science, University of the Philippines Diliman

Secretary General, Samahang Pisika ng Pilipinas (Physical Society of the Philippines)

Member, Samahang Pisika ng Pilipinas (Physical Society of the Philippines)

Councilor, Samahang Pisika ng Pilipinas (Physical Society of the Philippines)

Manuscript reviewer, Samahang Pisika ng Pilipinas (Physical Society of the Philippines)

Assistant Professor, Instrumentation Physics Laboratory Group

Associate Professor, Instrumentation Physics Laboratory Group

Member, Phi Kappa Phi Honor Society (Philippine Chapter)



Founding member, UP Kasimanwa  
 Faculty Co-Adviser, UP Kasimanwa  
 Faculty Adviser, UP Kasimanwa  
 Faculty Adviser, UP Physics Association  
 Member, UP Physics Association  
 Academic Committee Head, UP Physics Association  
 Associate Member, National Research Council of the Philippines  
 Regular Member, National Research Council of the Philippines

**Papers Presented**

2006 Geronimo, R.C., Uychiaoco, A. J., Lim, M., Seymour, R.M., Bantang, J., & Gomez, E.D. (2006). Assessing the impact of biodiversity changes on reef fisheries using an individual based model, 10<sup>th</sup> International Coral Reefs Symposium.

**Publications (to edit in database)**

2015 Pang, J.C.S., & Bantang, J.Y., Hodgkin–Huxley neurons with defective and blocked ion channels. *International Journal of Modern Physics C*, 2015, 26(10):1550112.

2014 Pang, J.C.S., Monterola, C.P., & Bantang, J.Y., Noise-induced synchronization in a lattice Hodgkin-Huxley neural network. *Physica A: Statistical Mechanics and its Applications*, 2014, 393(issue C):638-645.

2012 Pang, J.C.S., Bantang, J.Y., & Monterola, C.P., Effect of random link malfunctions to synchronization of Hodgkin-Huxley neurons in a lattice network. *International Journal of Modern Physics C: Computational Physics and Physical Computation*, 2012, 23(03):doi:10.1142/S0129183112500271.

2011 David-Dobay, M.P., Dobay, A., Bantang, J.Y., & Mendoza, E., How many trimers? Modeling influenza virus fusion yields a minimum aggregate size of six trimers, three of which are fusogenic. *Molecular Biosystems*, 2011, 7(10):2741-9.  
 Pastor, M.G., & Bantang, J.Y., Transport Efficiency of Passive Diffusion of Viral Cargos in Biological Cells. *International Journal of Modern Physics C*, 2011, 22(4):347-357.

2009 Batac, R., Pastor, M.,G., Arciaga, M., Bantang, J.Y., & Monterola, C., Kinks, Logarithmic Tails, and Super-stability in Bi-disperse Granular Media. *Physica A: Statistical Mechanics and its Applications*, 2009, 388(15):3072-3082.  
 Arciaga, M., Pastor, M., Batac, R., Bantang, J., & Monterola, C., Experimental observation and an empirical model of enhanced heap stability resulting from the mixing of granular materials. *Journal of Statistical Mechanics Theory and Experiment*, 2009, 2009(07):P07040.  
 David, M.P., Bantang, J.Y., & Mendoza, E.R., A Projective Brane Calculus with Activate, Bud and Mate as Primitive Actions. In: Priami C., Back R.J., Petre I. (eds) *Transactions on Computational Systems Biology XI. Lecture Notes in Computer Science*. Springer, Berlin, Heidelberg, 2009, 5750:164-186.

2008 Bantang, J., & Saloma, C., Suppression of chaos in coupled chaotic logistic models. *New Research in Nonlinear Phenomena*, 2008.

2007 Arciaga, M., Pastor, M., Batac, R., Bantang, J., & Monterola, C., Continuum model for the critical angle of a dry binary mixture of granular materials. 25<sup>th</sup> National Physics Congress (SPP), October 2007.

2006 Bantang, J., & Saloma, C., Co-existence of Poisson and non-Poisson processes in ordered parallel multilane pedestrian traffic. *Complexity*, 2006, 11(6):35-42.

- Geronimo, R.C., Uychiaoco, A. J., Lim, M., Seymour, R.M., Bantang, J., & Gomez, E.D., Assessing the impact of biodiversity changes on reef fisheries using an individual based model. In: Suzuki, Y. and Nakamori, T. and Hidaka, M. and Romallosa, K.M., Bantang, J., & Saloma, C., Three-dimensional light distribution near the focus of a tightly focused beams of few-cycle optical pulses. *Physical Review A*, 2003, 68(3):doi: 10.1103/PhysRevA.68.033812.
- 2003 Bantang, J.Y., Lim, M., Castro, P.A., Monterola, C., & Saloma, C., Foreign exchange market fluctuations as random walk in demarcated complex plane. Cornell University Library, 2003:arXiv:physics/0308062 [physics.comp-ph].
- 2002 Bantang, J.Y., Lim, M.T., Monterola, C., & Saloma, C., Gravity-assisted segregation of granular materials of equal mass and size. *Physical Review E*, 2002, 66(4 Pt 1):041306.
- 2000 CM Blanca, and C Saloma, Monte Carlo model of turbid media with mixed scatterers. 18th National Physics Congress (SPP), October 2000.
- Blanca, C.M.Y, Bantang, J., & Saloma, C., Diffraction effects in light propagation through a highly scattering medium. *Proceedings of Meeting of Japan Society for Laser Microscopy*, 2000, 25.

**Name** Marilyn S. Combalicer

**Gender** Female

**Education**

Doctor of Philosophy in Forest Environmental Science, Seoul National University, Republic of Korea 2007-2011

Master of Science in Forestry, Seoul National University, Republic of Korea 2001-2004

Bachelor of Science in Forestry (*cum Laude*), University of the Philippines Los Baños, College, 4031 Laguna, Philippines 1994-1999

**Fields of Specialization**

Ecophysiology

Forest Restoration

**Publications**

- 2015 Lee, D.K., Salleh, M.N., Ho, W.M., & Combalicer, M.S., Changing Trends of Forestry Research Demand. In L. Pancel and M. Kohl, Eds., *Tropical Forestry Handbook*, Second Edition, Berlin, Heidelberg: Springer-Verlag, 2015:1-9.
- 2014 Combalicer, M.S., Lee, D.K., Park, Y.D., & Bae, K.K., The Potentials of Nitrogen Fixing Tree Species for Forest Restoration in the Philippines. *International Research Journal of Biological Sciences*, 2014, 3(6):73-82.
- 2013 Chanhsamone, P., Park, P.S., Kim, H.S., Sawathvong, S., Park, Y.D., Combalicer, M.S., & Ho, W.M., Changes in Stand Structure and Environmental Conditions of a Mixed Deciduous Forest After Logging and Shifting Cultivation in Lao PDR. *Asia Life Sciences*, 2013, 22:75-94.
- 2012 Phongoudome, C., Lee, D.K., Sawathvong, S., Combalicer, M.S., & Ho, W.M., Biomass and Carbon Content Allocation of Six-year-old *Anisoptera Costata* Korth., nd *Dalbergia Cochinchinensis* Pierre, Plantations in Lao PDR. *Science Journal of Agricultural Research & Management*, 2012, 2012(Article ID):14 pages.  
Phongoudome, C., Lee, D.K., Sawathvong, S., & Combalicer, M.S., Natural Regeneration and Tree Species Composition of Mixed Deciduous Forest after Logging and Shifting Cultivation in Lao PDR. *Science Journal of Agricultural Research & Management*, 2012, 2012(Article ID):10 Pages.
- 2011 Camacho, L.D., Carandang, A.P., Combalicer, M.S., Camacho, S.C., Gevaña, D.T., & Yeo-Chang, Y., Economic Implications of Different Management Opportunities in Makiling Forest Reserve (MFR), Philippines. *Korean Forest Economics Society*, 2011, 18(1):1-13.
- 2010 Camacho, L.D., Combalicer, M.S., Yeo-Chang, Y., Combalicer, A., Carandang, A.P., Camacho, S.C., de Luna, C.C., & Rebugio, L.L., Traditional forest conservation knowledge/technologies in the Cordillera, Northern Philippines. *Forest Policy and Economics*, 2010, 22:3-8.
- 2007 Thaug, N.O., Lee, D.K., & Combalicer, M.S., Carbon sequestration of teak (*Tectona grandis* Linn.f.) plantation in the Bago Yoma region of Myanmar. *Journal Korean Forest Society*, 2007, 96:602-608.

**Name** Alumanda M. Dela Rosa

**Gender** Female

**Education**

Doctor of Philosophy in Biochemistry, University of Hawaii at Manoa, Hawaii, U.S.A. 1977

**Fields of Specialization**

Radiation Chemistry

Chemistry

Agricultural Research

Biomedical Research

Health Physics Research

Applied Physics

Isotope Techniques Research

Nuclear Materials Research

**Employment**

Director, Philippine Nuclear Research Institute, 2003-2016 June 30

Acting Director, Philippine Nuclear Research Institute, 2002

**Honors / Awards**

3<sup>rd</sup> Place, Search for 2001 PCASTRD Outstanding R & D in Advance Technology, for the Technical Paper entitled "Radiation-Modified Carrageenan for Agricultural and Health Care Applications", Philippine Council for Advanced Science and Technology Research and Development 2001 December 13

Outstanding Young Scientist (Radiation Chemistry), National Academy of Science and Technology 1985

**Trainings**

Regional Seminar on Facts of Nuclear Power and Considerations to Launch a Nuclear Power Program, Korea 2007 July 10

Workshop for Developing Future Strategy; Working Group Meeting on Enhancing the Roles and Status of the RCARO, Korea 2007 July 24

Workshop on Regional Security of Radioactive Sources Project, Australia 2004 November 10

International Seminar on Nuclear Security (For Managers and Decision Makers), United States of America 2004 October 11

Regional Coordinators Seminar for Decision Makers - For the Implementation of Radiation Protection, Thailand 2003 February 3

Regional Seminar on Approaches for the Effective Regulation on Radiation Protection and Safety of Radiation Sources, Thailand 2003 February 6

Radiation Protection of Natural Polymers for Healthcare Applications, Malaysia 2002 July 22

Fruit Fly Control Cooperation in the Asia-Pacific Region, Japan 2002 March 18

Role of Nuclear Management Practices in Increasing the Utilization and Sustainability of Nuclear Applications in the East Asia and Pacific Region, Myanmar 2001 November 12

Natural Polymers, Japan 2001 September

Symposium on Radiation Vulcanization of Natural Rubber Latex, Malaysia 1996 July 15

Seminar on Nuclear Power, Manila 1996 January 26

Seminar on Filipino Research Managers in the Forefront on Global Competitiveness, Los Baños 1995 August 30

Policy Research Tools, NICA Compound, Quezon City 1995 March 15

## Researches

### Completed

Nuclear Techniques to Address Specific Red Tide Concerns

Upgrading of Gamma Irradiation Facility

Nuclear Techniques to Study the Red Tide Problem

Preparation of New Hydrogels from Carrageenan via Radiation Copolymerization and Crosslinking

Radiation-Induced Graft Polymerization of Carrageenan For Biomaterials Application

Radiation Processing of Carrageenan for Health Care Application

Semi-Commercial Production of PVP Carrageenan Hydrogels for Burn/Wound Dressing and Bedsores

Radiation Processing of Carrageenan for Health Care Applications -Year II

## Papers Presented

2006 December 12-16 Sombrito, E.Z., De Vera, A.C., Honrado, M.C.V., Tabbada, R.S.dC., & Dela Rosa, A.M. (2006 December 12-16). Isotope-Based Techniques in the Management of Toxic Algal Bloom, 2006 EAS Asian Seas Congress, Haikou City, PROC.

2006 August 28 - September 1 Borras, M.T.L., Sombrito, E.Z., Dela Rosa, A.M., Osorio, R.G., & Bulos, A.dM. (2006 August 28 - September 1). Strategies Toward the Commercialization of PZC-based <sup>99m</sup>Tc Generator in the Philippines, 2006 FNCA Workshop on the Utilization of Research Reactors, Manila, Philippines.

2004 September 6-10 Abad, L.V., Aranilla, C.T., Rellve, L.S., & Dela Rosa, A.M. (2004 September 6-10). Radiation Processing of Carrageenan Using Electron Beam, FNCA 2004 Workshop on Application of Electron Accelerator - EB Treatment of Flue Gases, Beijing, China.

2004 May 24-26 Rellve, L.S., Nagasawa, N., Luan, L., Yagi, T., Aranilla, C.T., Abad, L.V., Kume, T., Yoshii, F., & Dela Rosa, A.M. (2004 May 24-26). Preparation of Carrageenan Oligomer by Radiation Degradation, 19<sup>th</sup> Chemistry Congress, Sarabia Manor Hotel, Iloilo City.

2003 November 2-7 Dela Rosa, A.M., Abad, L.V., Rellve, L.S., & Aranilla, C.T. (2003 November 2-7). Radiation Processing of Carrageenan for Healthcare Applications, IAEA/RCA Workshop on Radiation Processing of Natural Polymers, Mumbai, India.

- 2003 November 18 Abad, L.V., Relleve, L.S., Aranilla, C.T., & Dela Rosa, A.M. (2003 November 18). Properties of Radiation Synthesized Water Soluble Polymer-Carrageenan Hydrogels and their Applications, 5<sup>th</sup> Gel Symposium, Polymer Gels: Fundamentals and Nano-Fabrications, Kashiwa Campus, University of Tokyo, Japan.
- 2002 October 23-25 Deocaris, C.C., De Vera, A.C., Baluca, T.D., Asaad, C.O., & Dela Rosa, A.M. (2002 October 23-25). Manipulating In Vitro Ruminant Fermentation Using Radiolyzed Carrageenan, 39<sup>th</sup> Annual Convention of the Philippine Society of Animal Science (PSAS). Marriot Hotel, Cebu City, Philippines.
- 2002 March 18-23 Obra, G.B., Resilva, S.S., Dela Rosa, A.M., Covacha, S.A., Bignayan, H.G., Zamora, N.F., Galtan, E.G., & Golez, H.G. (2002 March 18-23). Integrated Fruit Fly Management Program in Guimaras Island, Workshop on Fruit Fly Control Cooperation in the Asia-Pacific Region, Japan International Convention Center, Okinawa, Japan.
- 1999 November 29 - December 3 Dela Rosa, A.M., Relleve, L.S., Abad, L.V., Aranilla, C.T., San Diego, C., Deocaris, C.C., Acosta, J.M., Genuine, G.S., & Acarzon, J. (1999 November 29 - December 3). Preparation and Characterization of Hydrogels Based on Radiation-Modified Carrageenan, 2<sup>nd</sup> Research Coordination Meeting on Radiation Processing of Indigenous Natural Polymers, Mumbai, India.
- 1999 October 18-22 Abad, L.V., & Dela Rosa, A.M. (1999 October 18-22). Natural Antioxidants for Radiation Vulcanized Natural Rubber Latex, 2<sup>nd</sup> Research Coordination Meeting on Improvement of Physical Properties of RVNRL, Japan.
- 1999 May 26-29 Abad, L.V., San Diego, C.M., Relleve, L.S., Aranilla, C.T., Dela Rosa, A.M., Rosiak, J.M., & Janik, I. (1999 May 26-29). Sol-Gel Analysis of Crosslinked Polymers, 15<sup>th</sup> Philippine Chemistry Congress, Cebu City, Philippines.
- 1999 May 10-14 Dela Rosa, A.M., Azanza, R.V., & Sombrito, E.Z. (1999 May 10-14). International Cooperation in Nuclear Science and Technology to Address Specific Harmful Algal Bloom Concerns, APEC-IOC Conference on Harmful Algal Management and Mitigation, Subic Freeport, Philippines.
- 1999 May 26-29 Dela Rosa, A.M., Relleve, L.S., Aranilla, C.T., Pascual, C.L., Abad, L.V., & San Diego, C. (1999 May 26-29). Preparation of New Hydrogels from Carrageenan Via Radiation Crosslinking, 15<sup>th</sup> Philippine Chemistry Congress, Cebu City, Philippines.
- 1997 September 8-12 Dela Rosa, A.M., Abad, L.B., Relleve, L.S., Aranilla, C.T., & Pascual, C. (1997 September 8-12). Radiation Response of Philippine Natural Rubber Latex, International Symposium on Radiation Technology for Conservation of the Environment. Zakopane, Poland.
- 1996 December 10-12 Cabalfin, E.G., & Dela Rosa, A.M. (1996 December 10-12). Radiation Processing: A Versatile Technology for Industry, 2<sup>nd</sup> Philippine Nuclear Congress. Manila Midtown Hotel, Philippines.
- 1996 July 15-17 Abad, L.V., Dela Rosa, A.M., Makuuchi, K., & Yoshii, F. (1996 July 15-17). The Role of Proteins on the Thermal Oxidative Aging of Radiation Vulcanized Natural Rubber Latex, Second International Symposium on RVNRL Kuala Lumpur, Malaysia.
- 1996 July 15-17 Dela Rosa, A.M., Abad, L.V., Relleve, L.S., Aranilla, C.T., & Pascual, C.L. (1996 July 15-17). Radiation Vulcanization of Philippine Natural Rubber Latex, Second International Symposium on RVNRL. Kuala Lumpur, Malaysia.
- 1996 May 23-24 Dela Rosa, A.M., Abad, L.V., Relleve, L.S., Aranilla, C.T., & Pascual, C.L. (1996 May 23-24). Radiation Vulcanization of Philippine Natural Rubber Latex, 12<sup>th</sup> Philippine Chemistry Congress, Iloilo City.

- 1995 May 22-25 Dela Rosa, A.M., Abad, L.V., Sta. Ana-Relleve, L.P., & Tranquilan, C.O. (1995 May 22-25). Effects of Antioxidants on the Stability of Radiation Vulcanized Natural Rubber Latex, 6<sup>th</sup> Asian Chemistry Congress and 11<sup>th</sup> Philippine Chemistry Congress. Philippine Village Hotel, Manila.
- 1995 May 22-25 Dela Rosa, A.M., Castañeda, S.S., & Sta. Ana-Relleve, L.P. (1995 May 22-25). Thermal Degradation Studies of Wood Polymer Composites, 6<sup>th</sup> Asian Chemistry Congress and 11<sup>th</sup> Philippine Chemistry Congress. Philippine Village Hotel, Manila.

## Publications

- 2016 Sen, M., Hien, N.Q., Phu, D.V., Quang, L.L., Zaman, K., Abad, L.V., Relleve, L., Aranilla, C.T., Racadio, C.D.T., Dela Rosa, A.M., Tahtat, D., Mahlous, M., Benamer, S., & Assia, N.-K., Antimicrobial and Antioxidant Properties of Oligosaccharides. In book: The Radiation Chemistry of Polysaccharides, Chapter: Chapter 9, Publisher: INTERNATIONAL ATOMIC ENERGY AGENCY, Editors: Saphwan Al-Assaf, Xavier Coqueret, Khairul Zaman Haji Mohd Dahlan, Murat Sen, Piotr Ulanski, 2016:257-282.
- 2014 Abad, L.V., Aranilla, C.T., Relleve, L.S., & Dela Rosa, A.M., Emerging applications of radiation-modified carrageenans. Nuclear Instruments and Methods in Physics Research B, 2014, 336:167-172.
- 2013 Abad, L.V., Relleve, L.S., Aranilla, C.T., Aliganga, A.K., San Diego, C.M., & Dela Rosa, A.M., Antioxidant activity potential of gamma irradiated carrageenan. Polymer Degradation and Stability, 2013, 76:275-279.
- 2012 Tranquilan-Aranilla, C., Nasagawa, N., Bayquen, A., & Dela Rosa, A.M., Synthesis and characterization of carboxymethyl derivatives of kappa-carrageenan. Carbohydrate Polymers, 2012, 87(2):1810-1816.
- 2011 Abad, L.V., Saiki, S., Nagasawa, N., Kudo, H., Katsumura, Y., & Dela Rosa, A.M., NMR analysis of fractionated irradiated  $\kappa$ -carrageenan oligomers as plant growth promoter. Radiation Physics and Chemistry, 2011, 80(9):977-982.
- 2010 Abad, L.V., Kudo, H., Saiki, S., Nagasawa, N., Tamada, M., Fu, H., Muroya, Y., Lin, M., Katsumura, Y., Relleve, L.S., Aranilla, C.T., & Dela Rosa, A.M., Radiolysis studies of aqueous  $\kappa$ -carrageenan. Nuclear Instruments and Methods in Physics Research B, 2010, 268(10):1607-1612.
- 2009 Abad, L.V., Kudo, H., Saiki, S., Nagasawa, N., Tamada, M., Katsumura, Y., Aranilla, C.T., Relleve, L.S., & Dela Rosa, A.M., Radiation degradation studies of carrageenans. Carbohydrate Polymers, 2009, 78(1):100-106.
- 2008 Abad, L.V., Okabe, S., Shibayama, M., Kudo, H., Saiki, S., Aranilla, C., Relleve, L., & Dela Rosa, A., Comparative studies on the conformational change and aggregation behavior of irradiated carrageenans and agar by dynamic light scattering. International Journal of Biological Macromolecules, 2008, 42(1):55-61.
- 2007 Abad, L.V., Saiki, S., Kudo, H., Muroya, Y., Katsumura, Y., & Dela Rosa, A.M., Rate Constants of Reactions of  $\kappa$ -Carrageenan with Hydrated Electron and Hydroxyl Radical. Nuclear Instruments and Methods in Physics Research Section B, 2007, 265(1):410-413.
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- 2004 Abad, L.V., Nasimova, I., Relleve, L.S., Aranilla, C.T., Dela Rosa, A.M., & Shibayama, M., Dynamic Light Scattering Studies of Irradiated Kappa Carrageenan. International Journal of Biological Macromolecules, 2004, 34:81-88.  
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Abad, L.V., Relve, L.S., Aranilla, C.T., Aliganga, A.K., San Diego, C.M., & Dela Rosa, A.M., Natural antioxidants for radiation vulcanization of natural rubber latex. *Polymer Degradation and Stability*, 2002, 76(2):275-279.
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- 1999 Relve, L., Yoshii, F., Dela Rosa, A., & Kume, T., Radiation-modified hydrogel based on poly(N-vinyl-2-pyrrolidone) and carrageenan. *Angewandte Makromolekulare Chemie*, 1999, 273(1):63-68.  
Aranilla, C.T., Yoshii, F., Dela Rosa, A.M., & Makuuchi, K., Kappa-carrageenan-polyethylene oxide hydrogel blends prepared by gamma irradiation. *Radiation Physics and Chemistry*, 1999, 55(2):127-131.
- 1995 Dela Rosa, A.M., & Kumakura, M., Trapping method of antibodies on surfaces of polymerizing discs for enzyme immunoassay. *Analytica Chimica Acta*, 1995, 312(1):85-94.
- 1989 Dela Rosa, A.M., & Banzon, R.B., The effect of  $\gamma$ -radiation on smoked fish using short-term mutagenicity assays. *Mutation Research*, 1989, 223(3):303-307.



**Name** John Ryan Cortez Dizon

**Gender** Male

**Organizational Affiliations**

Faculty, Bataan Peninsula State University, The College of Engineering & Architecture,  
Bataan Peninsula State University (Main Campus),  
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**Education**

Doctor of Philosophy in Mechanical Engineering, School of Mechanical Engineering,  
Andong National University, Andong City, South Korea 2008

Master of Science in Mechanical Engineering, School of Mechanical Engineering,  
Andong National University, Andong City, South Korea 2005

Bachelor of Science in Industrial Engineering, College of Engineering and  
Architecture, Saint Louis University, Baguio City, Philippines 2001

**Fields of Specialization**

Mechanical Engineering

Materials Engineering

Industrial Engineering

Mechanical Properties

Mechanical Testing

Mechanical Behavior of Materials

Tensile Testing

**Employment**

Postdoctoral Research Fellow, Andong National University

Lecturer, Bataan Peninsula State University

Research Assistant, Material Behavior Measurement and Evaluation  
Laboratory, Andong National University

**Honors / Awards**

Research Fellowship and Scholarship (3 years), Korea Science and Engineering  
Foundation, Andong National University

Research Fellowship and Scholarship (1 year), Korea Science and Engineering  
Foundation, Andong National University

**Trainings**

ANSYS for Finite Element Analysis, CAD-IT Training Center, Singapore

Universal Testing Machine Operation, Time Group, Bataan Peninsula State University

Pneumatics and Control System, Intelitek, Bataan Peninsula State University

Autocad 2010 with Color Rendering, Autodesk, MicroCadd, Pampanga

Distance Learning Course on Community-based Disaster Risk Management, Worldbank Training Institute

Distance Learning Course on Comprehensive Disaster Risk Management Framework, Worldbank Training Institute

International Engineering Research Conference, University of San Carlos

Organization Development and its Effective Implementation, Monitoring and Evaluation, Landbank Countryside Development Foundation, Inc., Hotel Elizabeth, Baguio City

Seminar-Training on Project Identification and Proposal Packaging, CLIERDEC, Bataan Peninsula State University

"in silico medicine Spring School 2009 - Course on Computational Biology and Biomedical Engineering", Cosmo Square Hotel and Congress Osaka, Japan

### Papers Presented

- 2010 October 12-13 Dizon, J.R.C., & Shin, H.S. (2010 October 12-13). Simulation of Ballooning Damage in Bi-2223 HTS tapes, 8<sup>th</sup> Asean Ansys Users' Conference, Nanyang Executive Center, Nanyang Technological University, Singapore.
- 2010 January 14-15 Dizon, J.R.C., Muñoz, R.C., Jr., & Shin, H.S. (2010 January 14-15). Investigations on Electromechanical Properties of High Temperature Superconductor Tapes, 4th International Engineering Research Conference 2010, Cebu, Philippines.
- 2008 August 17-22 Dizon, J.R.C., Shin, H.S., Ko, R.K., Kim, T.H., Ha, D.W., & Oh, S.S. (2008 August 17-22). Estimation of Residual Stress in ReBCO Tapes Using Various Methods, Applied Superconductivity Conference 2008, Chicago, Illinois, USA.
- 2008 July 21-25 Dizon, J.R.C., Shin, H.S., Bonifacio, R., Kim, T.H., Ha, D.W., & Oh, S.S. (2008 July 21-25). Critical Current Degradation Behavior in Lap-Jointed Coated Conductor Tapes, International Cryogenic Engineering Conference 22 / International Cryogenic Materials Conference 2008, COEX Convention & Exhibition Center, Seoul, Korea.
- 2008 July 21-25 Dizon, J.R.C., Bonifacio, R.F., Jun, Y.C., Shin, H.S., Kim, T.H., Ha, D.W., & Oh, S.S. (2008 July 21-25). Critical Current Degradation Behavior in SmBCO Coated Conductors Under Torsional Strain, International Cryogenic Engineering Conference 22 / International Cryogenic Materials Conference 2008, COEX Convention & Exhibition Center, Seoul, Korea.
- 2008 March 27-28 Dizon, J.R.C., Bonifacio, R.F., Shin, H.S., & Oh, S.S. (2008 March 27-28). Fundamental Investigations of the HTS Joint for Electric Power Applications, KIASC/KSC Superconductivity Spring Workshop, Daejeon, Korea.
- 2007 November 8-10 Dizon, J.R.C., Bonifacio, R.F., Park, J.S., Shin, H.S., Kim, T.H., Ha, D.W., & Oh, S.S. (2007 November 8-10). Tensile and Bending Strain Dependence of the Critical Current in Jointed ReBCO Coated Conductor Tapes, International Workshop on Coated Conductors for Applications (CCA2007), Jeju, Korea.
- 2007 November 8-10 Dizon, J.R.C., Bonifacio, R.F., Park, J.S., Shin, H.S., Kim, T.H., Ha, D.W., & Oh, S.S. (2007 November 8-10). Effect of crack formation in the coating film on I<sub>c</sub> degradation in coated conductor tapes, International Workshop on Coated Conductors for Applications (CCA2007), Jeju, Korea.
- 2007 October 11-12 Dizon, J.R.C., Bonifacio, R.F., Park, S.T., & Shin, H.S. (2007 October 11-12). Critical Current Degradation Behavior in Jointed ReBCO Coated Conductor Tapes, Annual

Korea Institute of Applied Superconductivity and Cryogenics Conference, Muju Resort, South Korea.

- 2007 October 11-12 Dizon, J.R.C., Bonifacio, R.F., Park, J.S., Shin, H.S., Kim, T.H., Ha, D.W., & Oh, S.S. (2007 October 11-12). Relationship between crack formation in coating film and  $I_c$  degradation in coated conductor tapes, Annual Korea Institute of Applied Superconductivity and Cryogenics Conference, Muju Resort, Korea.
- 2007 August 21-24 Shin, H.S., & Dizon, J.R.C. (2007 August 21-24). Tensile and Bending Strain Dependences of the Critical Current in SmBCO Coated Conductor Tapes, 5th Workshop on Mechanical and Electromagnetic Properties of Composite Superconductors (MEM'07), Princeton, New Jersey, USA.
- Shin, H.S., Dizon, J.R.C., Bonifacio, R., Ha, D.W., Cho, J.W., & Oh, S.S. (). Bending Strain Characteristics of Critical Current in Double-Layered Bi-2223 Superconducting Tapes, The 20th Bi-Annual Conference on Magnet Technology (MT-20), Philadelphia, Pennsylvania, USA.
- 2006 November 9-11 Shin, H.S., Dizon, J.R.C., Park, J.S., Ha, D.W., & Oh, S.S. (2006 November 9-11). Fundamental Electro-Mechanical Characteristics of Ballooning-Resistant Bi-2223 HTS Tapes, Annual Fall Conference of the Korean Institute of Electrical and Electronic Material Engineers (KIEEME 2006), Chonbuk, South Korea.
- 2006 October 30-November 1 Shin, H.S., Dizon, J.R.C., Ko, R.K., Kim, T.H., Ha, D.W., & Oh, S.S. (2006 October 30-November 1). Reversible tensile strain dependence of the critical current in YBCO coated conductor tapes, 19th International Symposium on Superconductivity (ISS2005), Nagoya, Japan.
- 2006 October 30-November 1 Dizon, J.R.C., Shin, H.S., Bonifacio, R.F., Park, S.T., Kuroda, T., Kim, T.H., Ha, D.W., & Oh, S.S. (2006 October 30-November 1). Bending Strain Effects on  $I_c$  Degradation Behavior in Coated Conductor Tapes, 19th International Symposium on Superconductivity (ISS2006), Nagoya, Japan.
- 2006 October 12-13 Shin, H.S., Dizon, J.R.C., Park, J.S., Kim, T.H., Ha, D.W., & Oh, S.S. (2006 October 12-13). Tensile behavior and  $I_c$  degradation characteristics of stabilized coated conductor tapes, Annual Korea Institute of Applied Superconductivity and Cryogenics Conference (KIASC 2006), Daejeon, South Korea.
- 2006 August 27-September 1 Shin, H.S., Dizon, J.R.C., Kim, T.H., Ha, D.W., & Oh, S.S. (2006 August 27-September 1). Critical Current Degradation Behavior in YBCO Coated Conductors Under Torsional Strain, Applied Superconductivity Conference (ASC 2006), Seattle, Washington, USA.
- 2006 June 22-24 Dizon, J.R., Shin, H.S., Kim, T.Y., Ko, R.K., & Oh, S.S. (2006 June 22-24).  $I_c$  degradation behavior in YBCO coated conductors under torsional strain, Annual Summer Conference of the Korean Institute of Electrical and Electronic Material Engineers, Muju Resort, South Korea.
- 2006 June 22-24 Shin, H.S., Dizon, J.R.C., Cho, J.W., Ha, D.W., & Oh, S.S. (2006 June 22-24). Bending strain dependence of the  $I_c$  degradation behavior in externally-reinforced Bi-2223 tapes with different hermeticity under pressurized liquid nitrogen, Annual Summer Conference of the Korean Institute of Electrical and Electronic Material Engineers, Muju Resort, South Korea.
- 2005 December 12-14 Shin, H.S., Dizon, J.R.C., Cho, J.W., Ha, D.W., & Oh, S.S. (2005 December 12-14). Bending strain characteristics of  $I_c$  degradation behavior in externally-reinforced Bi-2223 tapes under pressurized liquid nitrogen using a  $\rho$ -shaped Sample Holder, The

3rd Asian Conference on Applied Superconductivity and Cryogenics (ACASC 2005), Busan, Korea.

- 2005 October 24-26 Shin, H.S., Dizon, J.R.C., Katagiri, K., & Kuroda, T. (2005 October 24-26). Comparison of bending strain effect on the critical current degradation of Bi-2223 tapes through different measurement techniques, 18th International Symposium on Superconductivity (ISS2005), Tsukuba, Japan.
- 2005 October 4-5 Shin, H.S., Dizon, J.R.C., Choi, H.Y., Oh, S.S., & Ha, D.W. (2005 October 4-5).  $I_c$  degradation behavior in bent Bi-2223 tapes under pressurized liquid nitrogen, Annual Korea Institute of Applied Superconductivity and Cryogenics Conference, Jeju Island, South Korea.
- 2005 September 18-23 Shin, S.S., Dizon, J.R.C., Choi, H.Y., Kim, S., Ha, D.W., & Oh, S.S. (2005 September 18-23). Deformation and  $I_c$  Degradation Behavior in Bent Bi-2223 Tapes under Pressurized Liquid Nitrogen, 19th International Conference on Magnet Technology (MT-19), Genova, Italy.
- 2004 December 12-14 Shin, H.S., Dizon, J.R.C., & Oh, S.S. (2004 December 12-14).  $I_c$  Degradation Behavior of Bi-2223 Superconducting Tapes Under Axial Fatigue Loading, The 2nd Asian Conference on Applied Superconductivity and Cryogenics (ACASC 2004), Miyazaki, Japan.
- 2004 November 23-25 Shin, H.S., Dizon, J.R.C., Kim, K.H., Oh, S.S. & Ha, D.W. (2004 November 23-25). Mechanical and Transport Properties of Ag alloy/Bi-2223 Superconducting Tapes under Axial Fatigue Loading, 17th International Symposium on Superconductivity (ISS2004), Toki Messe, Niigata, Japan.
- 2004 October 3-8 Shin, H.S., Dizon, J.R.C., Kim, K.H., Oh, S.S. & Ha, D.W. (2004 October 3-8). Fatigue Behavior and its Influence on the Critical Current of Externally Reinforced Bi-2223 Superconducting Tape, 2004 Applied Superconductivity Conference (ASC 2004), Jacksonville, Florida, USA.
- 2004 October 20-22 Shin, H.S., Dizon, J.R.C., Kim, K.H., Oh, S.S., & Ha, D.W. (2004 October 20-22). Transport Property of Externally Reinforced Bi-2223 Superconducting Tape under Fatigue Loading, Annual Korea Institute of Applied Superconductivity and Cryogenics Conference, Muju, South Korea.

## Publications

- 2014 Dizon, J.R.C., Gorospe, A.B., & Shin, H.-S., Numerical analysis of stress distribution in Cu-stabilized GdBCO CC tapes during anvil tests for the evaluation of transverse delamination strength. *Superconductor Science and Technology*, 2014, 27(5):55023-55030(8).
- Shin, H.S., Dedicataria, M., Gorospe, A., Dizon, J.R., Oguro, H., & Awaji, S., Strain and Magnetic Field Response of  $I_c$  in Reinforced GdBCO Coated Conductor Tapes at 77 K. *Advances in Cryogenic Engineering*, 2014, AIP Confer:239-244.
- 2013 Oh, S.S., Kim, H.S., Ha, D.W., Ha, H.S., Sim, K., Dizon, J.R.C., & Shin, H.S., Variation of Local Critical Current Due to Mechanical Strain in RCE-REBCO Coated Conductors. *IEEE Transactions on Applied Superconductivity*, 2013, 24(3).
- Dizon, J.R.C., Nisay, A.R.N., Dedicataria, M.J.A., Muñoz, R.C., Jr., Shin, H.S., & Oh, S.S., Analysis of Thermal Residual Stress/Strain in REBCO Coated Conductor Tapes. *IEEE Transactions on Applied Superconductivity*, 2013, 24(3).
- Gorospe, A., Nisay, A., Dizon, J.R., & Shin, H.S., Delamination behaviour of GdBCO coated conductor tapes under transverse tension. *Proceedings of the 25th International Symposium on Superconductivity (ISS 2012) Advances in Superconductivity XXV, Physica C: Conductivity*, 2013, 494:163-167.

- Dizon, J.R.C., Oh, S.S., Sim, K.D., & Shin, H.S., Preliminary investigation of  $I_c$  homogeneity along the longitudinal direction of YBCO coated conductor tape under tensile loading. *Progress in Superconductivity and Cryogenics*, 2013, 15(2):24-28.
- 2012 Dedicataria, M.J., Dizon, J.R.C., Shin, H.S., & Sim, K.D., Establishment of CTE Measurement Procedure for PPLP at 77 K for HTS Power Cables using Double Extensometers. *Superconductivity and Cryogenics*, 2012, 14(4):24-27.
- 2009 Shin, H.S., Dedicataria, M.J., Dizon, J.R.C., Ha, H.S., & Oh, S.S., Bending strain characteristics of critical current in REBCO CC tapes in different modes. *Physica C Superconductivity*, 2009, 469:1467-1471.
- Shin, H.S., Dizon, J.R.C., Oh, S.S., & Bonifacio, R.F., Bending Strain Characteristics of the Transport Property in Lap-Jointed Coated Conductor Tapes. *IEEE Transactions on Applied Superconductivity*, 2009, 19(3):2991-2994.
- 2008 Shin, H.S., Dizon, J.R.C., Bonifacio, R., Kim, T.H., Ha, H.S., Kim, H.S., & Oh, S.S., Bending strain effects on the critical current in Cu-stabilized IBAD/EDDC processed SmBCO coated conductor tape. *Physica C Superconductivity*, 2008, 468:1702-1705.
- Shin, H.S., Dizon, J.R.C., Bonifacio, R., Park, S.T., Ha, D.W., & Oh, S.S., Bending Strain Characteristics of Critical Current in Double-Layered Bi-2223 Superconducting Tapes. *IEEE Transactions on Applied Superconductivity*, 2008, 18(2):1155-1158.
- Dizon, J.R.C., Shin, H.S., Ko, R.K., Ha, D.W., & Oh, S.S., Estimation of Residual Stress in ReBCO Coated Conductor Tapes Using Various Methods. *Journal of the Korea Institute of Applied Superconductivity and Cryogenics*, 2008, 10(4):9-12.
- 2007 Shin, H.S., Dizon, J.R.C., Ko, R.K., Kim, T.H., Ha, D.W., & Oh, S.S., Reversible tensile strain dependence of the critical current in YBCO coated conductor tapes. *Physica C*, 2007, 463-465:736-741.
- Shin, H.S., Dizon, J.R.C., Cho, J.W., & Oh, S.S., Bending strain characteristics of critical current degradation behavior in externally-reinforced Bi-2223 tapes under pressurized liquid nitrogen. *Cryogenics*, 2007, 47:431-436.
- Shin, H.S., Dizon, J.R.C., Kim, T.H., Ha, D.W., & Oh, S.S., Critical Current Degradation Behavior in YBCO Coated Conductors Under Torsional Strain. *IEEE Transactions on Applied Superconductivity*, 2007, 17(2):3274-3277.
- Shin, H.S., Dizon, J.R.C., Bonifacio, R., & Park, J.S., Influence of bending strain on  $I_c$  Degradation Behavior in YBCO Coated Conductor Tapes processed using RABiTS/MOD. *Journal of the Korea Institute of Applied Superconductivity and Cryogenics*, 2007, 9(2):11-14.
- 2006 Shin, H.S., Dizon, J.R.C., Katagiri, K., & Kuroda, T., Comparison of bending strain effect on the critical current degradation of Bi-2223 tapes through different measurement techniques. *Physica C*, 2006, 445-448:741-745.
- Shin, H.S., Dizon, J.R.C., Choi, H.Y., Kim, S., Ha, D.W., & Oh, S.S., Deformation and  $I_c$  Degradation Behavior in Bent Bi-2223 Tapes Under Pressurized Liquid Nitrogen. *IEEE Transactions on Applied Superconductivity*, 2006, 16(2):1051-1054.
- Shin, H.S., Dizon, J.R.C., Kim, K.H., Oh, S.S., & Ha, D.W.,  $I_c$  degradation behaviors of Bi-2223 superconducting tapes under axial fatigue loading. *Cryogenics*, 2006, 46:378-384.
- 2005 Shin, H.S., Kim, K.H., Dizon, J.R.C., Kim, T.Y., Ko, R.K., & Oh, S.S., The strain effect on critical current in YBCO coated conductors with different stabilizing layers. *Superconductor Science and Technology*, 2005, 18:S364-S368.
- Oh, S.S., Ha, D.W., Dizon, J.R.C., Kim, K.H., & Shin, H.S., Degradation of critical current by the mixed strain of bending and tension in Bi-2223/Ag HTS tape. *Physica C: Superconductivity and its Applications*, 2005, 426-431(Part 2):1194-1199.

Shin, H.S., Dizon, J.R.C., Kim, K.H., Oh, S.S., & Ha, D.W., Mechanical and transport properties of Ag alloy/Bi-2223 superconducting tapes under axial fatigue loading. *Physica C*, 2005, 426-431:1188-1193.

Shin, H.S., Dizon, J.R.C., Kim, K.H., Oh, S.S., & Ha, D.W., Fatigue Behavior and Its Influence on the Critical Current of Externally Reinforced Bi-2223 Superconducting Tape. *IEEE Transactions on Applied Superconductivity*, 2005, 15(2):3356-3359.

Shin, H.S., Dizon, J.R.C., Choi, H.Y., Ha, D.W., & Oh, S.S., Investigation of  $I_c$  Degradation Behavior in Bent Bi-2223 Tapes under Pressurized Liquid Nitrogen using a p-shaped Sample Holder. *Journal of the Korea Institute of Applied Superconductivity and Cryogenics*, 2005, 7(4):4-9.

**Name** Erlinda S. Ganzon-Naret

**Gender** Female

**Organizational Affiliations**

Station Head, Brackishwater Aquaculture Center, College of Fisheries & Ocean Sciences, Institute of Aquaculture, University of the Philippines Visayas, 5023 Miagao, Iloilo

**Education**

Master in Aquaculture (UNDP-FAO-UPV scholarship grantee), UP in the Visayas (UPV), Miag-ao, Iloilo 1989

Bachelor of Science in Biology (*cum laude*), University of San Agustin, Iloilo City 1974

Master of Agriculture, West Visayas State University , Lapaz, Iloilo City 1990

Doctor of Philosophy in Agriculture, West Visayas State University, Lapaz, Iloilo City 2013 March 22

**Fields of Specialization**

Fisheries Nutrition

Biological Sciences

**Employment**

University Researcher III, College of Fisheries, University of the Philippines, Miag-ao, Iloilo

Project Leader, Effects of different protein levels on the growth, food conversion and survival of sea bass (*Lates calcarifer*) in brackishwater ponds, UP Brackishwater Aquaculture Station, University of the Philippines, Miag-ao, Iloilo, 1988 March-1989 March

Research Assistant, UP Brackishwater Aquaculture Station, University of the Philippines, Miag-ao, Iloilo, 1978

**Association Membership**

Associate Member, National Research Council of the Philippines

Member, Asian Fisheries Society

**Honors / Awards**

Non-teaching staff for finishing a higher degree, University of the Philippines Visayas 2013

International Publication Award for research paper entitled: Comparison of fatty acid profile between cultured and wild caught grouper *Epinephelus coioides*, UP OVPAA 2006

Platinum award, UPV Employees Cooperative 2005 February

2004 Most Outstanding CFOS Research, Extension and Professional Staff (REPS), UPV-CFOS 2004 July 2

Outstanding Professional Jubilarian Award in the Field of Fisheries, UP Alumni Association (UPAA) Iloilo Chapter 2004 July 23

International Publication Award, UP System 2003

Chancellor's Award for the Most Outstanding Research, Extension and Professional Staff (REPS), University of the Philippines Visayas 2003 July 25

UPV Service Award for 25 years of service, University of the Philippines Visayas 2003 July 25

Chancellor's Award for Most Outstanding Research, UP Visayas, Iloilo City 2003 July

Scholarship grant, master's degree in Aquaculture at the UP in the Visayas (UPV), UNDP-FAO-UPV

## Trainings

Fourth Asian Fisheries Forum, Beijing, China 1995 October 16

Third Asian Fisheries Forum, Singapore 1992 October 26

## Researches

### Completed

The effect of dietary inclusion of selected soy products as partial replacement for fish meal on the growth and feed utilization of *Oreochromis niloticus*

Replacement of swamp cabbage (*Ipomea aquatica*) and sweet potato (*Ipomea Batatas*) leaf meals for fish meal on growth and fresh quality of Nile tilapia, *Oreochromis niloticus*

### Ongoing

Growth, feed utilization: Phosphorus excretion in juvenile seabass (*Lates calcarifer*) fed fishmeal-based diet with increasing dietary levels of feed pea (*Pisum sativum*)

## Papers Presented

- 2015 May 27 Ganzon-Naret, E.S. (2015 May 27). Effects of Incorporating Swamp Cabbage (*Ipomea aquatica*) and Papaya (*Carica papaya*) Leaf Meals at Different Dietary Levels of Replacing Fish Meal Protein in Practical Diets for Sea Bass (*Lates calcarifer*), World Aquaculture, Jeju, Korea.
- 2004 May Naret-Ganzon, E. (2004 May). The Effect of Dietary Inclusion of Selected Soy Products as Partial Replacement for Fish Meal on the Growth and Feed Utilization of *Oreochromis niloticus*, 7<sup>th</sup> Asian Fisheries Forum in Penang, Malaysia.
- 2001 October 1-6 Naret-Ganzon, E. (2001 October 1-6). Performance of indigenous protein sources as diets for tilapia under laboratory condition, 70<sup>th</sup> Anniversary of JSFS Yokohama, Japan.

## Publications

- 2014 Naret, E.S.G., Evaluation of Graded Levels of Cooked Pigeon Pea Seed Meal (*Cajanus cajan*) on the Performance and Carcass Composition of Asian Sea Bass (*Lates calcarifer*). *Animal Biology and Animal Husbandry - International Journal of the Bioflux Society*, 2014, 6(1):1-9.
- Naret, E.S.G., Potential Use of Three Legume Seeds as Protein Sources and Their Effects on Growth, Nutrient Utilization and Body Composition of Asian Sea Bass, *Lates calcarifer*. *Animal Biology and Animal Husbandry - International Journal of the Bioflux Society*, 2014, 6(1):84-94.
- Ganzon-Naret, E.S., The Influence of Different Stocking Densities on the Performance and Behavior among the Hatchery Reared Sea Bass (*Lates calcarifer*) Juveniles in Recirculating System. *Animal Biology and Animal Husbandry - International Journal of the Bioflux Society*, 2014, 6(2):125-133.



- Ganzon-Naret, E.S., Use of Raw and Heat-treated Mung Bean Seeds (*Phaseolus aureus*) as Replacement for Soybean Meal Protein in the Diets for Sea Bass, *Lates calcarifer* Fingerlings in Tanks: Effects on Growth Performance, Nutrient Utilization and Survival Rate. *Aquaculture, Aquarium, Conservation & Legislation - International Journal of the Bioflux Society*, 2014, 7(6):458-468.
- Naret, E.S.G., Utilization of *Moringa oleifera* Leaf Meals as Plant Sources at Different Inclusion Levels in Fish Meal Based Diets Fed to *Lates calcarifer*. *Animal Biology and Animal Husbandry - International Journal of the Bioflux Society*, 2014, 6(2):158-167.
- 2013 Ganzon-Naret, E.S., The use of green pea (*Pisum sativum*) as alternative protein source for fish meal in diets for Asian sea bass, *Lates calcarifer*. *Aquaculture, Aquarium, Conservation & Legislation - International Journal of the Bioflux Society*, 2013, 6(4):399-406.
- 2007 Naret, E.S.G., Koshio, S., Teshima, S., Ishikawa, M., The effect of dietary inclusion of selected soy product as partial replacement for fishmeal on the growth and feed utilization of *Orreochromis niloticus*. *UPV Journal of National Science*, 2007:165-172.
- 2005 Naret, E.S.G., Koshio, S., Teshima, S., & Ishikawa, M., Performance of indigenous protein sources as diets for tilapia under laboratory condition. *Fisheries Science*, 2005, 68(Supplement):797-800.
- Toledo, J.D., Ganzon-Naret, E.S., & Nakagawa, H., Comparison of fatty acid profile between cultured and wild caught grouper *Epinephelus coioides*. *Aquaculture Science*, 2005, 53(2):127-134.
- Naret, E.S.G., Koshio, S., Teshima, S., & Ishikawa, M., Utilization of solvent extracted soybean meal in pelleted feed for Tilapia (*Oreochromis niloticus*). *UPV Journal of Natural Science*, 2005, 10(1):9-16.
- 2002 Naret, E.S.G., Performance of Young Sea bass (*Lates calcarifer*) fry fed diets with fish silage. *UPV Journal of Natural Science*, 2002, 4:32-40.
- Naret, E.S.G., Performance of indigenous protein sources as diets for tilapia under laboratory condition. *Fisheries Science*, 2002, 68(1):797-800.
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- 1995 Naret, E.S.G., Effects of different protein levels on the growth, feed conversion and survival of sea bass (*Lates calcarifer*) in brackishwater ponds. *Proceedings of the Fourth Asian Fisheries Forum in Beijing, China, October 16-20, 1995*, 1995.
- 1994 Naret, E.S.G., & Fermin, A.C., Effect of delayed feeding of *Artemia salina* and partial replacement of *Moina macrocopa* on growth and survival of sea bass, *Lates calcarifer* (Bloch) larvae. *Israeli Journal of Aquaculture-Bamidgeh*, 1994, 46(1):48-52.
- Naret, E.S.G., & Catedrilla, L.C., Culture of *Siganus guttatus* in brackishwater ponds. *The Philippine Scientists*, 1994, 31:58-66.
- 1991 Naret, E.S.G., Effect of supplementary diets containing various levels of protein on the growth and survival of *Siganus guttatus* in ponds planted with lumut. *Fisheries Research Journal of the Philippines*, 1991, 16(1-2):15-21.
- 1990 Naret, E.S.G., Effects of incorporating farmyard manures on soil organic matter under submerged condition. *Graduate Research Paper/ Master of Agriculture*. West Visayas State University, 2nd semester 1990, 1990.

**Name** Mercedes Umali Garcia

**Gender** Female

**Education**

Doctor of Philosophy in Soil Science, University of Florida, Gainesville, U.S.A. 1978

Master of Science in Forestry, University of the Philippines Los Baños, Laguna, Philippines 1975

Bachelor of Science in Agriculture, University of the Philippines Los Baños, Laguna, Philippines 1960

**Fields of Specialization**

Botany

Biotechnology

Genetics

Forest Genetics

Tree Breeding

Tissue Culture

Rattan

Wood

Biological Nitrogen Fixation

Cytology

Soil Microbiology

**Association Membership**

Regular Member, National Research Council of the Philippines

**Honors / Awards**

Outstanding Technology Award (Gregorio Y. Zala Medal), Department of Science and Technology 2007 July 16-20

Award of Recognition (Bio-N inventor), Philippine Maize Federation (PhilMaize) and Department of Agriculture (DA), 4<sup>th</sup> Philippine National Corn Congress 2006 May 4-5

Outstanding Extension Program Award, University of the Philippines Los Baños 2005

Pro Partia (Rizal) Medal, a Gawad Saka Award for National Outstanding Agricultural Scientist, Department of Agriculture, Heroes Hall, Malacañang Palace 2001 October 23

Citation, Women Achievers in Agriculture and Forestry, Centennial Citation 1998

Plaque of citation, Scientific Achievement Award in Agricultural and Forestry, Research Council of the Philippines, Bahay ng Alumni, U.P. Diliman 1998 March 14

Pantas Award, Department of Science and Technology - Philippine Council for Agriculture, Aquatic and Natural Resources Research

ASEAN Achievement Award, Winrock International

## Researches

### Completed

Forest Biotechnology for the production of genetically superior planting stocks for industrial plantation in the Philippines: Field testing of biofertilizers (VA *Mycorrhiza* and *Rhizobium*) organic and chemical fertilizers in reforestation

Forest biotechnology for the production of genetically superior planting stocks for industrial tree plantation in the Philippines: Tree improvement and breeding of selected industrial plantation species

Refinement and completion of the tissue culture technology for the commercial rattan species

Establishment of rattan gene bank

Tissue culture of commercial species of rattan

Bio N™ (Biofertilizer)

### Papers Presented

- 1999 Umali-Garcia, M. (1999). New horizons and problems on the development of biological fertilizer for rice, NRC Annual Scientific Sessions.

### Publications

- 2009 Gallardo, B., Gascon, S., Garcia, M., & Comin, Francisco, Testing the response of macroinvertebrate functional structure and biodiversity to flooding and confinement. *Journal of Limnology*, 2009, 68(2):315-326.
- 1999 Oporto, D.A., & Umali-Garcia, M., Propagation of Kamagong. *Canopy International*, 1999, 25(1):10.
- Umali-Garcia, M., New horizons and problems on the development of biological fertilizer for rice. *Proceedings of the 1999 NRC Annual Scientific Sessions*, 1999, 22:27-39.
- 1998 Oporto, D.A., & Umali-Garcia, M., Clonal propagation of Dao: Saving an endangered timber species. *Canopy International*, 1998, 24(5):4, 10.
- Oporto, D.A., & Umali-Garcia, M., Superthrive, a vitamin-hormone preparation induced 100% rooting of Palosapis (*Anisopthera thurifera* Forxw.). *Biorefor Proc. Traders Hotel, Manila, Philippines*, 1998.
- Umali-Garcia, M., Melegrito, L.M., & dela Cruz, R.E., Vegetative propagation and clonal testing of two Gmelina provenances. *Bio-Refor Proc. Traders Hotel, Manila, Philippines*, 1998.
- Oporto, D.A. & Umali-Garcia, M., Effects of different concentrations of naphthalene acetic acid (NAA) on root production by shoot tip cuttings of Mamalis (*Pittosporum pentandrum*). *Ecosystems Research Digest*, 1998, 9(21):1-10.
- 1992 Dela Cruz, R.E., & Garcia, M.U., Nitrogen Fixation and Mycorrhizae in Acacias on Degraded Grasslands. *Tropical Acacias in East Asia and the Pacific. Proceedings of a first meeting of the Consultative Group for Research and Development of Acacias (COGREDA) held in Phuket, Thailand. Winrock International Institute for Agricultural Research*, 1992.
- 1985 Simbulan, C.M.G., & Garcia, Mercedes U., Biochemical and morphological characterization of a pigmented diazotroph from *Saccharium spontaneum* L. roots. *Philippine Journal of Science*, 1985, 114(Monograph):33-48.
- 1975 Garcia, M.U., Floral biology of amherstia. *The Pterocarpus: A Philippine Science Journal of Forestry*, 1975, 1:26-35.

**Name** Eufrocino C. Marfori

**Gender** Male

**Organizational Affiliations**

University Researcher II, BIOTECH, University of the Philippines Los Baños, College, Laguna 4031

**Education**

Doctor of Philosophy in Biotechnology, Osaka University, Japan 2003

**Fields of Specialization**

Plant Biotechnology

Natural products

Micropropagation

Agricultural Biotechnology

Plant Tissue Culture

**Association Membership**

Regular Member, National Research Council of the Philippines

**Researches**

**Completed**

Efficacy, mutagenicity and toxicity of trichosetin as a new antibiotic for poultry

Plant biotechnology-assisted generation of natural health care products from *Lansium domesticum* and *Aloe barbadensis*

Bioactive metabolites from locally-isolated actinomycetes

In vitro antimicrobial activity of trichosetin against some common poultry pathogens

Plant tissue culture of *Lansium domesticum* and *Aloe barbadensis* for secondary metabolite production

Studies on toxicity and mutagenicity of trichosetin

**Papers Presented**

- 2006 December 4-5 Marfori, E.C. (2006 December 4-5). Isolation and structure elucidation of a new triterpenoid glycoside from the fruit peel of *Lansium domesticum* Correa, 11<sup>th</sup> Natural Products Society of the Philippines, Silliman University, Dumaguete City.
- 2006 December 4-5 Marfori, E.C., Zulaybar, T.O., Malasa, A.B., Diwa, L., Peji, R., & Cuevas, O. (2006 December 4-5). Trichosetin, a new tetramic acid antibiotic effective against methicillin-resistant *Staphylococcus aureus* (MRSA), 11<sup>th</sup> Annual Convention of the Natural Products Society of the Philippines, Silliman University, Dumaguete City.
- 2006 December 4-5 Zulaybar, T.O., Papa, LA., Marfori, E.C., Brown, M.B., & Mercado, B.C. (2006 December 4-5). Bioactive compounds from locally-isolated macrofungi effective against ethicillin resistant *Staphylococcus aureus*, 11<sup>th</sup> Annual Convention of the Natural Products Society of the Philippines, Silliman University, Dumaguete City.
- 2006 November 7-8 Marfori, E.C. (2006 November 7-8). Production of Trichosetin from the Dual Culture of *Catharanthus roseus* Callus and *Trichoderma harzianum* and Evaluation of its

Therapeutic Property Against Methicillin Resistant *Staphylococcus aureus*, 35<sup>th</sup> Annual Convention of Kapisanan ng mga Kimiko sa Pilipinas, Southern Tagalog, FPRDI-DOST, UPLB, College, Laguna.

- 2006 July 12-13 Zulaybar, T.O., Papa, L.A., Marfori, E.C., Alcantara, E.P., & Mercado, B.C. (2006 July 12-13). Bioactive compound from actinomycete for health and agriculture applications, 28<sup>th</sup> NAST Annual Scientific Meeting, Manila Hotel, Manila.
- 2006 May 10-13 Marfori, E.C., Zulaybar, T.O., Kajiyama, S., Fukusaki, E., & Kobayashi, A. (2006 May 10-13). Isolation of the major antimicrobial compound from *Lansium domesticum* and its activity against methicillin-resistant *Staphylococcus aureus*, 35<sup>th</sup> Annual Convention of the Philippine Society for Microbiologists, Inc. and 5<sup>th</sup> Asia-Pacific Biotechnology Congress, Tagbilaran City.
- 2006 May 10-13 Zulaybar, T., Papa, L., Marfori, E., & Mercado, B. (2006 May 10-13). Searching for new antimicrobial agents from Philippine actinomycetes, 35<sup>th</sup> Annual Convention of the Philippine Society for Microbiologists, Inc. and 5<sup>th</sup> Asia-Pacific Biotechnology Congress, Tagbilaran City.
- 2006 May 19 Marfori, E.C., & Malasa, A.B. (2006 May 19). Development of trichosetin as a therapeutic agent for poultry, 2006 NOCEI Research Forum, Lyceum of Batangas, Batangas City.
- 2005 November 2-5 Marfori, E. (2005 November 2-5). Preliminary screening of Philippine actinomycetes against methicillin-resistant *Staphylococcus aureus*, BioThailand 2005, Queen Sirikit Convention Center.

## Publications

- 2016 Macalalad, E.A., Robidillo, C.J.T., & Marfori, E.C., Influence of Different Cytokinins on the Growth, [6]-Gingerol Production and Antioxidant Activity of in vitro Multiple Shoot Culture of Ginger (*Zingiber officinale* Roscoe). Research Journal of Medicinal Plant, 2016, 10(2):194-200.
- Marfori, P.A.N., Maligalig, M.D.G., Estacio, M.A.C., Cena, R.B., Desamero, M.J.M., Ang, M.J.C., & Marfori, E.C., Acute oral toxicity of lansioside D in mice. International Journal of Toxicological and Pharmacological Research, 2016.
- Cafino, E.J.V., Lirazan, M.B., & Marfori, E.C., A Simple HPLC Method for the Analysis of [6]-Gingerol Produced by Multiple Shoot Culture of Ginger (*Zingiber officinale*). International Journal of Pharmacognosy and Phytochemical Research, 2016, 8(1):38-42.
- 2015 Marfori, E.C., Kajiyama, S.I., Fukusaki, E.-I., & Kobayashi, A., Lansioside D, a new triterpenoid glycoside antibiotic from the fruit peel of *Lansium domesticum* Correa. Journal of Pharmacognosy and Phytochemistry, 2015, 3(5):140-143.
- 2014 Parungao-Balolong, M.M., Caluag, M.L.B., Catibog, I.B.D., Cortes-Maramba, N.P., Sia, I.C., Sio, S.O., Balolong, E.C., & Marfori, E.C., Acute Oral Toxicity of Trichosetin in Mice (*Mus musculus* L.). Philippine Journal of Science, 2014, 143(2):99-106.
- 2010 Marfori, E.C., Clonal Micropropagation of *Moringa oleifera* L.. Philippine Agricultural Scientist, 2010, 93(4):454-457.
- Marfori, E.C., Bamba, T., Kajiyama, S., Fukusaki, E.-I., & Kobayashi, A., ChemInform Abstract: Biosynthetic studies of the tetramic acid antibiotic trichosetin. ChemInform, 2010, 35(50).
- Sta Cruz, F.C., Bayot, R.G., Ontoy, J.C.E., Elvira, P.R.V., Fabro, A.M., Marfori, E.C., & Calumpang, S.M.F., Detection and Transmission of *Candidatus Liberibacter* sp Causing Leaf Mottling of Citrus Species Grown in Three Provinces of Southern Luzon, Philippines. Philippine Journal of Crop Science, 2010, 35(1):52-61.

- 2009 Alad, P.A.O., Cocos, A.A.S., Balolong, E.C., Jr., Parungao, M.M., & Marfori, E.C., Mutagenicity Potential of the Novel Drug Trichosetin Estimated by Using the *rec* Assay and Micronucleus Test. *Philippine Journal of Science*, 2009, 138(2):119-124.
- 2007 Marfori, E.C., & Malasa, A.B., Efficacy, mutagenicity and toxicity of trichosetin as a new antibiotic for poultry. *Philippine Agricultural Scientist*, 2007, 90(2):91-95.
- 2006 Marfori, E.C., Zulaybar, T.O., & Malasa, A.B., Production of trichosetin from the dual culture of *Catharanthus roseus* Callus and *Trichoderma harzianum* and evaluation of its therapeutic property against methicillin-resistant *Staphylococcus aureus*. Proceedings of the 35<sup>th</sup> Annual Convention of the Kapisanan ng mga Kimiko ng Pilipinas-Southern Tagalog, FPRDI-DOST, UPLB, College, Laguna, 2006.  
Marfori, E.C., Zulaybar, T.O., Malasa, A.B., Diwa, L., & Cuevas, O., Trichosetin, a New Tetramic Acid Antibiotic Effective Against Methicillin-Resistant *Staphylococcus Aureus*. 11<sup>th</sup> Natural Products Society of the Philippines, Silliman University, Dumaguete City, 2006.
- 2005 Marfori, E. & Malasa, A.B., Tissue culture for the rapid clonal propagation of *Aloe barbadensis* Miller. *Philippine Agricultural Scientist*, 2005, 8(1):167-170.
- 2003 Marfori, E.C., Kajiyama, S., Fukusaki, E.-I., & Kobayashi, A., Phytotoxicity of the tetramic acid metabolite trichosetin. *Phytochemistry*, 2003, 62(5):715-721.
- 2002 Marfori, E.C., Kajiyama, S., Fukusaki, E.-I., & Kobayashi, A., Trichosetin, a Novel Tetramic Acid Antibiotic Produced in Dual Culture of *Trichoderma harzianum* and *Catharanthus roseus* Callus. *Zeitschrift für Naturforschung C*, 2002, 57(5-6):466-470.  
Marfori, E.C., Bamba, T., Kajiyama, S., Fukusaki, E.-I., & Kobayashi, A., Biosynthetic studies of the tetramic acid antibiotic trichosetin. *Tetrahedron*, 2002, 58:6655-6658.

**Name** Mutya Ma. Quintos-Manalo

**Gender** Female

**Organizational Affiliations**

Associate Professor, Department of Forest Biological Sciences, College of Forestry and Natural Resources, University of the Philippines Los Baños, College, 4031 Laguna, Philippines

**Education**

Master of Science in Forestry, University of the Philippines Los Baños, College, 4031 Laguna Philippines 1983

Bachelor of Science in Forestry (*Cum Laude*), University of the Philippines Los Baños, College, 4031 Laguna Philippines 1976

**Fields of Specialization**

Forest Pathology

Microbiology

Biotechnology

**Association Membership**

Member, National Research Council of the Philippines

**Honors / Awards**

Outstanding Teacher Award in Biological Sciences, College of Forestry and Natural Resources, University of the Philippines Los Baños 2013

Outstanding Teacher Award in Biological Sciences, College of Forestry and Natural Resources, University of the Philippines Los Baños 2002

Guillermo Ponce Professorial Chair Award, University of the Philippines 2001 July - 2002 June

Academic Excellence Award in Forest Biological Sciences and Cum Laude, University of the Philippines Los Baños 1976

**Papers Presented**

2013 October 8-12 Case, A.E., Ashigtar, S.M., Cannon, P.G., Militante, E.P., Quintos-Manalo, M., Pampolina, N.M., Hanna, J.W., Brook, F.E., Ross-Davis, A.L., Kim, M.S., & Klopfenstein, N.B. (2013 October 8-12). DNA-based approaches to identify forest fungi in Pacific Islands: a pilot study, 60<sup>th</sup> Annual Western International Disease Forest Work Conference. Tahoe City, CA, U.S.A.

2004 Quintos-Manalo, M. & Kim, Y.H. (2004). Characterization of *Flammulina velutipes* associated with root rot of *Hibiscus syriacus*, Korean Society of Plant Pathologists International Symposium: New Horizons in Plant Pathology: Biotechnology for Plant Health.

**Publications**

2014 Ata, J.P., & Manalo, M.M.Q., In vitro evaluation of *Cymbopogon nardus* essential oil against leaf disease fungus of Narra (*Pterocarpus indicus* Wild.). International Research Journal for Biological Sciences, 2014, 3(8):56-59.

2013 Case, A.E., Ashigtar, S.M., Cannon, P.G., Militante, E.P., Quintos-Manalo, M., Pampolina, N.M., Hanna, J.W., Brook, F.E., Ross-Davis, A.L., Kim, M.S., &

- Klopfenstein, N.B., DNA-based approaches to identify forest fungi in Pacific Islands: a pilot study. Proceedings of the 60<sup>th</sup> Annual Western International Disease Forest Work Conference, Tahoe City, CA, U.S.A., 2013.
- 2004 Quintos-Manalo, M. & Kim, Y.H., Characterization of *Flammulina velutipes* associated with root rot of *Hibiscus syriacus*. Proceedings of the Korean Society of Plant Pathologists International Symposium: New Horizons in Plant Pathology: Biotechnology for Plant Health, 2004.
- 2002 Manalo, M.Q., Propagation of Virus-free Plants. In: Basic Principles and Application of Biotechnology in Forestry. Edited by D, Krishnapilay. APAFRI, Kuala Lumpur, Malaysia, 2002:131-134.
- 1994 Militante, E.P., Aggangan, N.S., & Manalo, M.Q., Phellinus Root Rot Disease of Mangium. Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development, Department of Science and Technology, 1994.
- 1989 Dela Cruz, R.E., Militante, E.P., Aggangan, N.S., & Manalo, M.Q., Determination of the effectiveness of mycorrhizal species in increasing growth and development of *Pinus caribaea*. Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development, Department of Science and Technology, 1989.
- Dela Cruz, R.E., Militante, E.P., Aggangan, N.S., & Manalo, M.Q., Effectiveness of different provenances of *Scleroderma cepa* on the growth of *Pinus caribaea*. Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development, Department of Science and Technology, 1989.
- Dela Cruz, R.E., Militante, E.P., Aggangan, N.S., & Manalo, M.Q., Establishment of phosphorus response curves for mycorrhizal and non-mycorrhizal *Pinus caribaea*. Philippine Council for Agriculture, Aquatic and Natural Resources Research and Development, Department of Science and Technology, 1989.
- 1977 Kobayashi, T., de Guzman, E.D., & Quintos, M.M., Some observations on the microfungi of ips-infested pinus kesiya in the Philippines. *The Pterocarpus*, 1977, 3(2):19-24.
- 1975 Quintos, M.M., Sandoval, L.D., & Dela Cruz, R.E., Effects of light quality and duration on the germination of *anthocephalus chinensis* rich. ex walp. seeds. *The Pterocarpus: A Philippine Science Journal of Forestry*, 1975, 1:44-46.



**Name** Kelvin S. Rodolfo

**Gender** Male

**Organizational Affiliations**

Professor Emeritus, Department of Earth and Environmental Sciences University of Illinois, Chicago, USA

**Education**

Doctor of Philosophy in Geology (Marine Geology), University of Southern California, Los Angeles, California, U.S.A. 1967

Master of Science in Geology (Marine Geology), University of Southern California, Los Angeles, California, U.S.A. 1964

Bachelor of Science in Geology, University of the Philippines - Diliman, Diliman, Quezon City 1958

**Fields of Specialization**

Marine Geology

Oceanography

Sedimentology

Environmental Science

Natural-hazard mitigation

Volcanology

Peak Oil

Climate Change

Global Warming

**Employment**

Senior visiting Fellow, Earth System Science, Manila Observatory, Ateneo de Manila University, 2011

Professor, Honors College, University of Illinois at Chicago, 2004-2007

Adjunct Professor, National Institute of Geological Sciences, University of the Philippines, 2001-2009

TOKTEN Consultant, United Nations Development Programme, 1996

Visiting Professor, National Institute of Geological Sciences, University of the Philippines, 1996-2000

Professor Emeritus, Department of Earth and Environmental Sciences, University of Illinois at Chicago, 1994-Present

Advisor/Head, Zambales Lahar Scientific Monitoring Group, 1992-1998

Chief, Pinatubo Lahar Hazards Taskforce, 1991

Scientist, Leg 126 (Philippine Sea), Ocean Drilling Program, D/V JOIDES RESOLUTION, 1989

Scientist, Leg 59 (Philippine Sea), R/V GLOMAR CHALLENGER, Deep-Sea Drilling Program, 1978

Scientist, Leg 26 (Southern Indian Ocean), R/V GLOMAR CHALLENGER, Deep-Sea Drilling Program, 1972

Scientist, Leg 16 (East-Central Pacific), R/V GLOMAR CHALLENGER, Deep-Sea Drilling Program, 1971

Scientist, Global cruise R/V OCEANOGRAPHER U.S. National Oceanographic Atmospheric Administration, 1967

Instructor to Professor, Department of Geological Sciences, University of Illinois at Chicago, 1966-1994

Scientist, International Indian Ocean Expedition, R/V PIONEER, US Coast and Geodetic Survey, 1964

Exploration Geologist, San Jose Oil Corp., Philippines, 1958-1960

### **Association Membership**

Fellow, American Association for the Advancement of Science

Fellow, Geological Society of America

Member, American Geophysical Union

Member, Geological Society of the Philippines

Member, Society of Sedimentary Geologists (SEPM)

Member, Sigma Xi

Corresponding Member, National Academy of Science and Technology

Associate, Danforth Foundation

### **Honors / Awards**

Balik Scientist Awardee, Department of Science and Technology 2008

U.P. Alumni Association Professional Award in Geology, UP Alumni Association 1997

UIC Teaching Excellence Award, College of Liberal Art and Sciences, University of Illinois at Chicago 1989

Outstanding Filipino in the Midwest in the Field of Education, Cavite Association of America 1984

UIC Curriculum Development Grant, University of Illinois at Chicago 1981

GA-28904, Suspended sediments off Cape Hatteras, North Carolina, National Science Foundation 1971-1972

GA-27111, Suspended Sediments off Cape Hatteras, North Carolina, National Science Foundation 1970-1971

Grant, GA-12483, supplement to NSF GA-1072, National Science Foundation 1969-1970

Grant, GA-1072, Martaban Submarine Canyon, NE Indian Ocean, National Science Foundation 1967-1969

## Researches

### Completed

GA-1072, Martaban Submarine Canyon, NE Indian Ocean

GA-12483, supplement to NSF GA-1072

GA-27111, Suspended Sediments off Cape Hatteras, North Carolina

GA-28904, Suspended sediments off Cape Hatteras, North Carolina

## Papers Presented

- 2008 Paguican, E.M.R., Lagmay, A.M.F., Rodolfo, K.S., Rodolfo, R.S., Tengonciang, A.M.P., Lapus, M.R., Baliatan, E.G., & Obille, E.C. (2008). Extreme rainfall-induced lahars and dike breaching at Mayon Volcano, Philippines, 30 November 2006, Iceland meeting, International Assembly on Volcanoes and Chemistry of the Earth's Interior.
- 2000 Siringan, F. P., Maeda, Y., Rodolfo, K.S., Nakamura, T., & Omura, A. (2000 November 14-16). Short-Term and Long-Term Changes of Sea Level in the Philippine Islands, APN/SURVAS/LOICZ Joint Conference on Coastal Impacts of Climate Change and Adaptation in the Asia-Pacific Region, Kobe, Japan.
- 1996 Rodolfo, K.S., Tamayo, R.A., Remotigue, C.T., & Cagas, J.A. (1996). Geological reasons for breaching of the "Transverse Dike", Pasig-Potrero "Megadike" system, Pampanga, 1996 Convention of the Geological Society of the Philippines.
- 1996 Rodolfo, K.S. (1996). Mount Pinatubo lahars: scientific "givens", and some political and socio-economic consequences, International Symposium On Disasters and Health, Manila.
- 1992 Rodolfo, K.S., & Umbal, J.V. (1992 February 3-6). Catastrophic lahars on the western flanks of Mount Pinatubo, Philippines, Workshop on Effects of Global Climate change on Hydrology and Water Resources at the Catchment Scale, Tsukuba, Japan.
- 1988 July 19-23 Arguden, A.T., Umbal, J.V., & Rodolfo, K.S. (1988 July 19-23). 17 October 1985 typhoon-triggered lahar on Mayon Volcano, Philippines, International Conference on Volcanoes, Kagoshima, Japan.

## Publications

- 2009 Paguican, E.M.R., Lagmay, A.M.F., Rodolfo, K.S., Rodolfo, R.S., Tengonciang, A.M.P., Lapus, M.R., Baliatan, E.G., & Obille, E.C., Extreme rainfall-induced lahars and dike breaching, 30 November 2006, Mayon Volcano, Philippines. *Bulletin of Volcanology*, 2009, 71:845-857.
- 2008 Rodolfo, K.S., & Umbal, J.V., A prehistoric lahar-dammed lake and eruption of Mount Pinatubo described in a Philippine aborigine legend. *Journal of Volcanology and Geothermal Research*, 2008, 176:432-437.  
Rodolfo, K.S., "Peak Oil": The global crisis of diminishing petroleum supply, and its implications for the Philippines. *Asian Studies*, 2008, 41:43-112.  
Paguican, E.M.R., Lagmay, A.M.F., Rodolfo, K.S., Rodolfo, R.S., Tengonciang, A.M.P., Lapus, M.R., Baliatan, E.G., & Obille, E.C., Extreme rainfall-induced lahars and dike breaching at Mayon Volcano, Philippines, 30 November 2006. *Proceedings of the Iceland meeting, International Assembly on Volcanoes and Chemistry of the Earth's Interior*, 2008.
- 2007 Gaillard, J.-C., Delfin, F.G., Dizon, E.Z., Paz, V.J., Ramos, E.G., Remotigue, C.T., Rodolfo, K.S., Siringan, F.P., Soria, J.L.A., & Umbal, J.V., Planning for the future: A multidisciplinary approach to reconstructing the Buag episode of Mt. Pinatubo, Philippines. In J. Grattan and R. Torrence, eds., *Living Under the Shadow: Cultural*

- Impacts of Volcanic Eruptions. Left Coast Press, Walnut Creek, California, 2007:225-252.
- Lagmay, A.M.F., Rodolfo, K.S., Siringan, F.P., Uy, H., Remotigue, C., Zamora, P., Lapus, M., Rodolfo, R., & Ong, J., Geology and hazard implications of the Maraunot notch in the Pinatubo Caldera, Philippines. *Bulletin of Volcanology*, 2007, 69(7):797-809.
- 2006 Rodolfo, K.S., & Siringan, F.P., Global sea-level rise is recognised, but flooding from anthropogenic land subsidence is ignored around northern Manila Bay, Philippines. *Disasters*, 2006, 30(1):118-139.
- 2005 Cabato, M.E.J.A., Rodolfo, K.S., & Siringan, F.P., History of sedimentary infilling and faulting in Subic Bay, Philippines revealed in high-resolution seismic reflection profiles. *Journal of Asian Earth Sciences*, 2005, 25:849-858.
- Gaillard, J.-C., Delfin, F.G., Jr., Dizon, E.Z., Larkin, J.A., Paz, V.J., Ramos, E.G., Remotigue, C.T., Rodolfo, K.S., Siringan, F.P., Soria, J.L.S., & Umbal, J.V., Dimension anthropique de l'éruption du Mont Pinatubo, Philippines, entre 800 et 500 ans BP. *L'Anthropologie*, 2005, 109(2):249-266.
- Soria, J.L.A, Siringan, F.P., & Rodolfo, K.S., Compaction rates and paleo-sea levels along the delta complex north of Manila Bay, Luzon Island, Philippines. *Science Diliman*, 2005, 17(2):39-45.
- 2003 Rodolfo, K.S., Tsunamiites and seismites. *McGraw-Hill Encyclopedia of Science and Technology*, 2003 Yearbook, 2003:439-443.
- Gaillard, J.-C., Delfin, F.G., Jr., Ramos, E.G., Paz, V.J., Siringan, F.P., Rodolfo, K.S., Soria, J.L.S., Remotigue, C.T., Umbal, J.V., & Dizon, E.Z., Socio-economic impact of the c. 800-500 yr BP. eruption of Mt. Pinatubo (Philippines): Hypotheses from the archaeological and geographical records. *Proceedings of the Society of Philippine Archaeologists*, 2003, 2:46-58.
- Rodolfo, K.S., Siringan, F.P., Remotigue, C.T., & Lamug, C.B., Worsening floods around northern Manila Bay, Philippines: Research-based analysis from physical and social science perspectives. *Philippine Sociological Review*, 2003, 51:17-40.
- Siringan, F.P., & Rodolfo, K.S., Relative seas level changes and worsening floods in the western Pampanga Delta: Causes and some possible mitigation measures. *Science Diliman*, 2003, 15:1-12.
- 2002 Crittenden, K.S., & Rodolfo, K.S., Bacolor Town and Pinatubo Volcano, Philippines: Coping with Recurrent Lahar Disaster: The Archaeology of Natural Disasters. Robin Torrence and John Grattan, eds. *One World Archaeology Series*, Routledge, London, 2002.
- Rodolfo, K.S., & Crittenden, K.S., Environmental consequences of lahars, subsidence, and human behavior in Bacolor, Pampanga. *Philippine Sociological Review*, 2002, 30:89-109.
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- 1969 Rodolfo, K.S., Bathymetry and marine geology of the Andaman Basin, and tectonic implications for southeast Asia. *Geological Society of American Bulletin*, 1969, 80:1203-1230.
- 1966 Rodolfo, K.S., Andaman Sea. In: Fairbridge, R.W., ed., *Encyclopedia of Oceanography*: Reinhold, N.Y., 1021 pp., 1966:32-35.
- 1964 Bandy, O.L., & Rodolfo, K.S., Distribution of foraminifera and sediments, Peru-Chile Trench area. *Deep-Sea Research*, 1964, 11:817-839.
- 1962 Emery, K.O., Hulsemann, J., & Rodolfo, K.S., Influence of turbidity currents upon basin waters. *Limnology and Oceanography*, 1962, 7:439-446.



**Name** Abercio Valdez Rotor

**Gender** Male

**Organizational Affiliations**

Professorial Lecturer II, UST Graduate School, España, Manila

Professor V, St. Paul College, Quezon City

Museum Curator, St. Paul College Museum,

Proprietor, Rotor Enterprises (Food products and interior decors),

VP Research Director, Agricultural and Rural Development Foundation,

**Education**

Bachelor of Science in Agriculture, Araneta University, Victoneta Park, Rizal 1962

Bachelor of Science in Journalism, Lyceum of the Philippines, Intramuros, Manila 1966

Master of Science in Botany, Araneta University, Manila 1971

Doctor of Philosophy in Biological Sciences, University of Santo Tomas, Manila 1986

**Fields of Specialization**

Entomology

Biological Sciences

**Employment**

Trustee and VP for Research, Agricultural and Rural Development Foundation, 1990-Present

Head, Rice Task Force and Consultant, Office of the President, 1995-1997

Instructor, School on the Air, Functional Literacy Program Radyo ng Bayan, 1990-1997

Consultant on Food and Agriculture, Senate of the Philippines, 1989-1996

Consultant on Call, UNICEF, FAO, ADB and APO, 1988-Present

Project Director, Samar Integrated Rural Development Project, 1986-1987

Trustee and Director, National Greening Movement, 1986-1994

Director, National Food Authority, for Corporate Farming, 1980-1989

Technical Consultant, Food Terminal Incorporated, National Post-Harvest Institute for Research and Extension, 1980-1989

Regional Director, National Grains Authority (Ilocos Region) and Cagayan Valley, 1974-1980

Council Secretary and Chief, Agricultural Coordinator, National Food and Agriculture Council, DA, 1971-1974

Instructor, De Ocampo Memorial Schools, 1969-1971

Instructor and Laboratory In-charge, Lyceum of the Philippines, 1967-1970

Instructor, Araneta University, 1964-1966

### **Association Membership**

Member, Earthman Society  
Member, Haribon Society  
Director, Philippine Agricultural Economics & Development Association  
Member, Association of Systematic Biologist of the Philippines  
Member, Shalom International  
Associate Member, National Research Council of the Philippines  
Regular Member, National Research Council of the Philippines

### **Honors / Awards**

Award-winning author of "Living with Nature in Our Times" (Philippine National Book Award), National Book Development Board and the Manila Critics' Circle 2008  
Award-winning author of "The Living with Nature Handbook" (Gintong Aklat Award), Book Development Association of the Philippines 2003  
Outstanding Teacher of the Philippines, Commission on Higher Education 2002  
Outstanding Teacher among 69 model Teacher in the Philippines, 1998  
Filipino Scientist Award, DOST-DECS-Bato Balani 1996  
Model Employee (Faculty category), St. Paul College 1996  
Tanglaw Award for Best Radio Program, School on the Air, Radyo ng Bayan 1995  
Outstanding Son of Ilocos Sur, Ilocos Sur Provincial Board 1993  
Cooperative Award, Tagudin Credit Cooperative 1991  
TAWID heritage Award for Food Industry Development, 1988  
Executive Leadership and Management, Career Executive Service Officer (CESO) 1985  
Meritissimus - PhD in Biological Science, University of Santo Tomas 1985  
Presidential Award, PLEDGES, for Agriculture, 1977  
AGREE (Extension Program), Department of Education, Culture and Sports (DECS) - Isabela State University 1977  
Regional Director, Region 1, Civil Service 1976  
Citation, Representing Philippines, Five Grain Men of the World, Canadian International Grains Institute (CIGI), Winnipeg 1976  
Meritissimus - M.Sc., Araneta University 1971  
Senior Plant Pest Control Officer Exam, PPC 1971  
Outstanding Thesis, Biology of the Bagworm, 1963  
8th Placer, Agricultural Extension Specialist 1963

### **Trainings**

Agriculture and Policy Adjustment Workshop, Harvard University and UP Los Baños 1992

Workshop on Cooperatives, Afro-Asian Institute, Tel-Aviv, Israel 1992

Executive Leadership and management Course, Development Academy of the Philippines 1985

International Grain Authority Course, Canadian International Grain Institute, Manitoba, Canada 1976

Multiple Cropping Systems, FFTC for Asian and Pacific Region, Taiwan, ROC 1973

Nuclear Technology for University Faculty, PARC 1968

Graduate Course in Farm and Home Development, UPLB, under Ford Foundation Scholarship 1962

## Researches

### Completed

Oroduction of indigenous crops and reforestation and forest conservation projects

People-based food production program and postharvest programs

Integrated farming systems for rice, corn, coconut farms and sugar lands through multiple cropping, water impounding, tri-commodity farming, organic fertilization and zero tillage

## Papers Presented

- 1999 December Rotor, A.V. (1999 December). Integrating art in science teaching, Philippine Echoes.
- 1985 Rotor, A.V. (1985). Wheat growing in the Philippines, International Wheat and Maiz Development Center, Mexico.
- 1986 Rotor, A.V. (1986). Ethnic practices in basi wine making in the Ilocos Region, ASEAN-NZ Inter-Institutional Linkages.
- 1999 Rotor, Abercio V. (1999). Ethnobotany in the Philippines, Annual Convention of Association of Private Colleges and SchoolsUST Journal of Graduate Research.

## Publications

- 1999 Rotor, A.V., The third green revolution. Philippine Echoes, 1999.
- 1998 Rotor, A.V., Teaching values to children through painting. Philippine Echoes, 1998.
- 1997 Rotor, A.V., Flora of Tikob Lake, Tiaong, Quezon. SPC-FR Journal, 1997.  
Rotor, A.V., College Manual for Morphology and Classification of Plants. Book, 1997.
- 1996 The SPC-QC botanical garden. Paulinews, 1996.
- 1995 Rotor, A.V., Light in the woods II and III. UST Graduate Research Journal, 1995.  
Rotor, A.V., Concerns in improving Filipino education. SPC Faculty Research Journal, 1995.  
Rotor, A.V., Colonies and associations of seaweeds. SF, La Union, UST Graduate Research Journal, 1995.
- 1990 Rotor, A.V., How to Live and Manage our Generous Fragile Land. A compilation/Book, 1990:250 pp.
- 1988 Rotor, A.V., Integrated rural development and extension. UST Graduate Research Journal, 1988.
- 1987 Rotor, A.V., Ethnobotany of maguey (*Agave cantala*) in the Ilocos Region. UST Graduate Research Journal, 1987.

- 1985 Rotor, A.V., A sample collection on marine and freshwater phytoplankton in selected areas. UST Graduate Research Journal, 1985.  
Rotor, A.V., College Manual for General Botany. Book, 1985.
- 1981 Rotor, A.V., Ecological considerations on peat soil management in Sab-A Basin Swamp, Leyte. Grains Journal, 1981.  
Rotor, A.V., Corn and sorghum marketing in the Philippines. Grains Journal, 1981.
- 1978 Rotor, A.V., Some aspects in grain production and postharvest technology. Grains Journal, 1978.
- 1975 Rotor, A.V., College Manuals for Economic Entomology. Book, 1975.
- 1967 Rotor, A.V., Life patterns for survival. Lyceum Faculty Journal, 1967.
- 1963 Rotor, A.V., Biology of the bagworm (*Cryptothelea fuscescens*). Araneta University Research Journal, 1963.

**Name** Leah M. Tolosa

**Gender** Female

**Organizational Affiliations**

Research Associate Professor / Assistant Director, UMBC Center for Advanced Sensor Technology University of Maryland, Baltimore Country 1000 Hiltop Circle, Baltimore, Maryland

**Education**

Doctor of Philosophy in Chemistry, University of Connecticut, United States of America 1995

Master of Science in Chemistry, University of Santo Tomas, España, Manila 1987

Bachelor of Science in Chemistry, University of Santo Tomas, España, Manila 1980

**Fields of Specialization**

Chemistry

Fluorescence Spectroscopy

Biochemistry

Physics

Analytical Chemistry

Medicine

Toxicology

Biotechnology

Biosensor Development

Chemiluminescence

Spectroscopy

Sensors

Fluorescent Dye

Glucose

**Employment**

Research Associate Professor, University of Maryland Baltimore County, 2006-Present

Assistant Director, UMBC Center for Advanced Sensor Tech, 2004-Present

Research Assistant Professor, University of Maryland Baltimore County, 2001-2006

Research Associate, Center for Fluorescence Spectroscopy, 1996-2001

Research Associate, University of Maryland Baltimore, 1996-2001

Post-Doctoral Fellow, Brandeis University, Waltham, MA, 1994-1996

Teaching/Research Assistant, University of Connecticut, Storrs, CT, 1988-1994

Chemistry Instructor, University of Santo Tomas, Manila, 1980-1987

### Honors / Awards

Balik Scientist Award, Department of Science and Technology 2008

Principal Investigator, Nanotech Biotechnology Research Project Support Initiative, University System of Maryland and Maryland Department of Business and Economic Development 2007-2008

Principal Investigator, Research Project Grant (R01DK072465-01), National Institutes of Health 2005-2010

Principal Investigator, Technologies for Metabolic Monitoring (W81XWH-04-1-0781), U.S. Army Medical Research and Materiel Command 2004-2007

Principal Investigator, Mentored Quantitative Research Career Development Award (K25DK062990), National Institutes of Health 2003-2006

### Papers Presented

- 2015 Tiangco, C., Andar, A., Ge, X., Sevilla, F., III, Rao, G., Stinchcomb, A., & Tolosa, L. (2015). Progress towards passive transdermal glucose sensing based on a glucose binding protein, Bethesda, MD, USA.
- 2015 Tiangco, C., Brown, S., Kostov, Y., Rao, G., Sevilla, F., III, & Tolosa, L. (2015). Fiber Optic Biosensor using Glucose Binding Protein to Detect Passive Diffusion of Transdermal Glucose, NIAID, Bethesda, MD, USA.

### Publications

- 2016 Tiangco, C., Brown, S., Sevilla, F., III, Rao, G., & Tolosa, L., Fluorophore labeled Bioengineered GBP for measurement of transdermal glucose. *Acta Manilana*, 2016, 64:25-32.
- El-Sayed, M.M.H., Brown, S.R., Mupparapu, K., & Tolosa, L., The effect of pH on the glucose response of the glucose-galactosebinding protein L255C labeled with Acrylodan. *International Journal of Biological Macromolecules*, 2016, 86:282-287.
- Tiangco, C., Fon, D., Sardesai, N., Kostov, Y., Sevilla, F., III, Rao, G., & Tolosa, L., Fiber optic biosensor for transdermal glucose based on the immobilized glucose binding protein. *Sensors and Actuators B Chemical*, 2016, 242:569.
- 2015 Chatterjee, M., Ge, X., Kostov, Y., Luu, P., Tolosa, L., Woo, H., Viscardi, R., Falk, S., Potts, R., & Rao, G., A rate-based transcutaneous CO<sub>2</sub> sensor for noninvasive respiration monitoring. *Physiological Measurement*, 2015, 36(5):883-894.
- 2014 Woo, H.C., Tolosa, L., El-Metwally, D., & Viscardi, R.M., Glucose monitoring in neonates: Need for accurate and non-invasive methods. *Archives of Disease in Childhood - Fetal and Neonatal Edition*, 2014, 99:F153-F157.
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