



RIGOBERTO C. ADVINCULA

Professor

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RESEARCH:

Design, synthesis, and characterization of polymers and nanostructured materials capable of controlled-assembly, tethering, and self-organization in ultrathin films. This includes functional macromolecules, coordination polymerization, polymerization on surfaces, electropolymerization, and preparation of nanoparticles and hybrid materials. Properties include: smart coatings, electrically conducting, photoluminescent, electroluminescent, energy harvesting, optically active, and biocompatible. Surface sensitive spectroscopy and microscopy is systematically utilized to probe materials properties and biological phenomena. We are also involved in investigating nanoparticles, nanostructured surfaces, and nanocomposite materials for sensor and bioapplications. Other applied studies include fluids, proppants, additives, packaging, coatings, biomaterials, plastics, and process development.

EDUCATION:

- Ph.D. in Chemistry 1994. The University of Florida, Department of Chemistry, Gainesville, FL
- B.S. in Chemistry, 1987. The University of the Philippines, Institute of Chemistry, Diliman, Quezon City, Philippines.

HONORS AND PROFESSIONAL RECOGNITION:

- *Herman Mark Scholar Award*, Poly. Chem. Div., American Chemical Society (ACS) 2013
- *Fellow*, American Chemical Society (ACS) 2010
- *Fellow*, Polymer Materials Science and Engineering (PMSE) Division 2011, ACS.
- *Fellow*, Polymer Chemistry Division 2011, ACS.
- *Editor*, Reactive and Functional Polymers (Elsevier)
- *Editor*, Macromolecular Research (Springer)
- *Regional Editor*, Journal of Bioactive and Compatible Polymers (Sage)
- *Vice-Chair*, Polymer Chemistry Division, American Chemical Society
- Elected to *National Institute of Health (NIH) College of CSR Reviewers*, 2010

- NSF *Hybrid Flexible Electronics and Photonics Workshop*, Invited 2010
- *National Academy of Science, National Academy of Engineering, and Institute of Medicine*, Keck Futures Initiative in Imaging Science, Invited Participant, 2010
- *Excellence in Science and Technology Award*, Philippine Dev-USA Foundation, 2010
- *Koh Science Award*, Philippine-American Academy of Scientists and Engineers, 2010
- *Excellence in Undergraduate Research Mentoring Award*, University of Houston, 2009
- *Balik Scientist Awardee*, Dept. of Science and Technology (DOST) Philippines 2009
- *Engineering Research and Development Technology (ERDT) Fellow*, Philippines, 2008.
- *Technical Focus Lecturer Award*, American Coatings Association (FSCT), ICE 2007.
- *Research Excellence and Scholarship Award*, University of Houston, 2007.
- *Arthur Doolittle Award*, American Chemical Society, PMSE Division, 2003.
- *NSF-CAREER Award*, National Science Foundation, 1999.
- *Alexander Von Humboldt Research Fellow*, Germany, 1995.
- *Intel Science Award Finalist Mentor*, 2007
- Advincula Asteroid 23017 named by the Massachusetts Institute of Technology, Lincoln Laboratory Near-Earth Asteroid Program for Intel Finalist Mentorship.
- *Researcher of the Year 2009* Honorable Mention, *Bioscience Technology Magazine*
- *ISI Knowledge Citation Summary from 1991-2010*: H-index = 33, average of 82 citations per year, average of 9 citations per article, and 3,261 total citations.
- *European Physical Journal* – Colloquium Paper 2011
- Editorial Advisory Board, *Macromolecules* (2007-2009)
- Editorial Advisory Board, *Chemistry of Materials*
- Editorial Advisory Board, *ACS Applied Materials and Interfaces*
- Editorial Board, *Journal of Applied Polymer Science*
- Editorial Board, *Macromolecular Rapid Communications*
- Editorial Board, *Macromolecular Physics and Chemistry*
- Editorial Board, *Polymers for Advanced Technologies (PAT)*
- *President 2012*– Philippine American Academy of Scientist and Engineers (PAASE)
- *Chair*, University of Houston Research Council (2008-2009)
- Visiting Professor, Austrian Institute of Technology (AIT) 2009, 2010, 2011.
- Visiting Professor, National Taiwan University and National Chung Hsing University, Taiwan, 2010.
- Visiting Professor, University of Paris, East Paris Institute of Chemistry and Materials Science - Institut de Chimie et des Matériaux Paris-Est 2009
- Visiting Professor, Max Planck Institute for Polymer Research, 1999 and 2006.
- Visiting Professor, Waseda University, Center of Excellence (COE) Program, Dec. 2007.
- Visiting Professor, McGill University, CSACS, July 2006.
- Visiting Professor, University of Montreal, CSACS, August 2006.
- Visiting Professor, National University of Singapore, Dept. of Chemistry, 2004 and 2006
- Visiting Professor of Nanotechnology, Tokyo University of Agriculture and Technology (TUAT), Department of Organic and Polymer Materials, 2003.
- Visiting Professor of Venture Business Laboratory TUAT, VBL Program, 1997.
- Visiting Professor, Adjunct Professor, University of the Philippines, Institute of Chemistry and Dept. of Chem. Eng. 2008 and 2009.
- Visiting Professor, Adjunct Prof., University of Santo Thomas, Dept. of Chemistry, 2009.
- NSF Molecular Electronics Workshop, Invited, 2007.
- *National Academy of Science, National Academy of Engineering, and Institute of Medicine*, Keck Futures Nanoscience Initiative, Invited, 2004.

- NSF Materials Chemistry Workshop, Invited, 2002.
- *Phi Beta Kappa Honor Society*, elected, April 1995.
- *University National Scholarship*, NSTA, Philippines B.S. in Chemistry, 1983.
- *ACS Colloids Division*, Best poster award 3 times, 2005, 2010.
- *SPE, Polyolefins Conference*, Houston, Best poster award 2009.
- *Chair*, Alabama local Section, American Chemical Society (ACS) (2001).
- *Membership*: American Chemical Society (ACS), Materials Research Society (MRS), American Association for the Advancement of Science (AAAS), National Association of Corrosion Engineers (NACE), Society of Plastics Engineers (SPE), Philippine American Association of Scientists and Engineers (PAASE).
- Nominated to the American Chemical Society's *Carl Marvel Creativity Award* and *Stanley Israel Award*; and Welch Foundation's *Norman Hackerman Award*.
- *Grant Peer-Reviewer and Panelist*: National Science Foundation (NSF) - Materials, Chemistry, Engineering, CEMRI, MRSEC, STC, MRI, MWN, IGERT, CAREER, SBIR, STTR, National Institute of Health (NIH) – Nano Panel, SBIR Panel, Department of Energy (DOE), Department of Defense (DOD), ACS-PRF, Department of State.
- *Journal Peer Reviewer*: 54 peer-reviewed Journal Titles, *Nature Materials*, *JACS*, *Advanced Materials*, *Macromolecules*, *Chemistry of Materials*, *Langmuir*, *J. Phys. Chem.*, *Nanoletters*, *Macrom. Rapid Comm.*, *ACS Nano*. Top 10% Referee on ACS Journal Titles and Top Referee *Proceedings A RSC Journal*.
- *Plenary, keynote, invited, workshop speaker, and symposia organizer to international, national, and topical conferences* on polymers, nanoscience, display devices, electronic materials, interfacial science, coatings, etc. ACS, MRS, APS, Smart Coatings 2011, Pacificchem 2010, Nano-Coatings 2010, MVS 2010, ICSM 2010, RSCE 2009, EMAPP 2009, PAT 2009, Particles 2009, Nanotech 2009, PCC 2009, Smart Coatings 2009, GRC Polymer West 2009, IUPAC Macro 2008, NanoKorea 2007, Pacificchem 2005, US-Japan POLYMAT 2008, IDC-NICE 2008, Polycom 2008, Stimuli-Responsive Polymers 2009, IDS6 2009, UP-SCAN 2009, Macromex 2008, JBST-Metrology 2008, Hybrid-Organic Inorganic Polymers 2008, Smart Coatings 2008, Eurasia 2008, ICMAT 2007, PAT 2007, Dechema: Polymer Reactive Processing and Engineering 2007 OLED World Summit 2007, Poly. Medicine 2007, ISPAC 2006, ICFPAM, ISOME 2001.

PROFESSIONAL EXPERIENCE:

- **2012-Present**: *Professor*, Case Western Reserve University, Department of Macromolecular Science and Engineering, Cleveland, OH
- **2007-2011**: *Professor*, University of Houston, Department of Chemistry and Department of Chemical Engineering, Houston, TX.
- **2005-2007**: *Associate Professor Joint Appointment*, **University of Houston**, Department of Chemical Engineering, Houston, TX.
- **2002-2007**: *Associate Professor*, **University of Houston**, Department of Chemistry, Houston, TX.
- **1997-2002**: *Assistant Professor*, **University of Alabama at Birmingham**, Department of Chemistry, Birmingham, AL. Tri-Campus Materials Program Faculty and Adjunct Prof. with Department of Materials Eng. and Dept. of Biomedical Eng.
- **1996-1997**: *Post-Doctoral Research Fellow*, **Stanford University**, Department of Chemical Engineering, Stanford, CA. Advisors: Curt Frank and Wolfgang Knoll.
- **1995-1996**: *Alexander Von Humboldt Research Fellow*, **Max Planck Institute for Polymer Research**, Mainz, Germany. Advisor: Wolfgang Knoll.
- **1991 and 1993**: *Visiting Scientist*, **Institut Charles Sadron** and IPCMS- Group Materiaux Organique, CNRS, Strasbourg, France.
- **1989-1993**: *Teaching Assistant*, **University of Florida**, Department of Chemistry.

INDUSTRIAL EXPERIENCE:

- Consulting and Collaboration, *PPG Industries, Rhodia, Dow Corning, Exxon Mobil, Avery-Dennison Inc., Nalco Energy Services, Nanotex Inc., Roche Diagnostics, Zeon Nippon, Fuji Films, Lintec Inc., Agilent Technologies, INMAT Technologies, Dai Nippon Printing, Chemrez Technologies, San Miguel Corporation, Energy Development Corporation, Kuraray America.*
- Short and long-term industrial projects, analysis, synthesis, product development, engineering solutions, monitoring, collaborative proposals, litigation, and tutorials.
- Head of the Polymers for Oil and Gas and Sustainability Engineering at Case Western Reserve University.

MOST RECENT PUBLICATIONS

Total publications lifetime: 412 and 11 Patents

1. Pernites, R.; Santos, C.; Maldonado, M.; Ponnepati, R.; Rodrigues, D.; Advincula, R. "Tunable protein and bacterial cell adsorption on colloiddally templated superhydrophobic polythiophene films" *Chem. Mater.* **2012**, *24* (5), 870–880.
2. Pernites, R.; Venkata, S.; Tiu, B.; Yago, A.; Advincula, R. "Nanostructured, Molecularly Imprinted, and Template-Patterned Polythiophenes for Chiral Sensing and Differentiation" *SMALL* **2012**, *8*, 1669–1674.
3. Foster, E.; De Leon, A.; Mangadlao, J.; Advincula, R. "Electropolymerized and polymer grafted superhydrophobic, superoleophilic, and hemi-wicking coatings" *J. Mater. Chem.*, **2012**, *22*, 11025-11031.
4. De Leon, A.; Pernites, R.; Advincula, R. "Superhydrophobic Colloiddally Textured Polythiophene Film as Superior Anticorrosion Coating" *ACS Appl. Mater. Interfaces*, **2012**, *4* (6), 3169–3176.
5. Albrecht, K.; Pernites, R.; Felipe, J.; Advincula, R.; Yamamoto, K. "Patterning carbazole–phenylazomethine dendrimer films" *Macromolecules* **2012**, *45* (3), 1288–1295
6. Abdulbaki, M.; Tangonan, A.; Advincula, R.; Lee, T.R., Krishnamoorti, R. "Properties of single-walled carbon nanotube-based poly(phenylene vinylene) electroluminescent nanocomposites" *J. Poly. Sci. Part B: Polymer Phys.* **2012**, *50*, 272–279.
7. Felipe, J.; Ponnepati, R.; Dutta, P.; Pernites, R.; Advincula, R. "Electropolymerized bioresistant coatings of OEGylated dendron carbazoles: Design parameters and protein resistance SPR studies" *Polymer* **2012**, *53*, 427-437.
8. Ponnepati, R.; Felipe, J.; Muthalagu, V.; Puno, K.; Wolff, B.; Advincula, R.* "Conjugated polymer network films of poly(p-phenylene vinylene) with hole-transporting carbazole pendants: dual photoluminescence and electrochromic behavior" *ACS Appl. Mater. Interfaces* **2012**, *4* (3), 1211–1218.
9. Felipe, J.; Estillore, N.; Pernites, R.; Nguyen, T.; Ponnepati, R.; Advincula, R. "On the Interfacial Behavior of OEG-Linear Dendron Monolayers: Aggregation, Nanostructuring, and Electropolymerizability" *Langmuir* **2011**, *27* (15), 9327–9336.
10. Cui, K.; Tria, C.; Pernites, R.; Binag, C.; Advincula, R. "PVK/MWNT Electrodeposited Conjugated Polymer Network Nanocomposite Films" *ACS Applied Mater. & Interfaces* **2011**, *3* (7), 2300–2308.
11. Apodaca, D.; Pernites, R.; Tria, C.; Del Mundo, F.; Advincula, R. "Electropolymerized Molecularly Imprinted Polymer Film: EIS Sensing of Bisphenol A" *Macromolecules* **2011**, *44* (17), 6669–6682.

12. Pernites, R.; Ponnampati, R.; Felipe, J.; Advincula, R.* “Electropolymerization molecularly imprinted polymer (E-MIP) SPR sensing of drug molecules: pre-polymerization complexed terthiophene and carbazole electroactive monomers” *Biosensors and Bioelectronics* **2011**, 26 (5), 2766-2771.
13. Pernites, R.; Foster, E.; Felipe, J.; Robinson, M.; Advincula, R.* “Patterned Surfaces Combining Polymer Brushes and Conducting Polymer via Colloidal Template Electropolymerization” *Adv. Mater.* **2011**, 23 (10) 1287-1292.
14. Pernites, R.; Ponnampati, R.; Felipe, J.; Foster, E.; Advincula, R “Colloidally Templated Two-Dimensional Conducting Polymer Arrays and SAMs: Binary Composition Patterning and Chemistry” *ACS Appl. Mater. Interfaces*, **2011**, 3 (3), 817–827.
15. Foster, E.; Tria, C.; Pernites, R.; Advincula, R. "Patterned Polymer Brushes via Electrodeposited ATRP, ROMP, and RAFT Initiators on Colloidal Template Arrays" *Soft Matter* **2011**, 8, 353-359.

PROFESSIONAL ACTIVITIES:

1. Organizer of National and International Symposia:

- *MACROPRO 2014: Polymers for Oil and Gas* March 2014, Houston, TX
- *Polymers for Oil and Gas Processes* American Chemical Society National Meeting, POLY Division, Dallas, TX August 2014.
- *Hybrid Conjugated Polymers and Nanomaterials*, Pacificchem 2010, Honolulu, HI December 2010. Co-organizers Prof. Wolf and Prof. Valiyaveetil.
- *Polymers P3: Polymers for Packaging, Paints, and Pharmaceuticals 2010*, Manila Philippines, University of the Philippines, Institute of Chemistry and Balik Scientist Program.
- *Polymer Innovations and the Global Economy*, 239th American Chemical Society National Meeting, Polymer Division, San Francisco, CA March 2010, together with Kathleen Havelka and Dennis Smith.
- *Polymer Materials and Analysis Workshop 2009*, Manila Philippines, University of Santo Thomas, Faculty of Science and Balik Scientist Program.
- *Surface Characterization and Analysis at the Nanoscale (SCAN) Workshop 2009*, Manila Philippines, University of the Philippines, Institute of Chemistry and Balik Scientist Program.
- *Smart Coatings 2009* Orlando, FL. Co-organizer together with Prof. Jamil Baghdachi.
- *SCAN: Surface Characterization and Analysis at the Nanoscale 2009*, University of Houston and KSV Instruments.
- *US-Japan POLYMAT 2008* Japan Polymer Society and Polymer Chemistry Division, ACS, Ventura, CA. Organizer together with Prof. Hiroyuki Nishide.
- *Macromex 2008* Mexican Polymer Society and Polymer Division, ACS. Los Cabos, Mexico. Together with Kris Matyjaszewski, Gabriel Luna, and Enrique Saldivar.
- *Macromolecular Assemblies for Biomolecules, Cells, and Tissues Symposium* 236th American Chemical Society National Meeting, PMSE Division, Philadelphia, PA August 2008, together with Prof. Wolfgang Knoll.
- *POLYCOM 2008*, Biennial Meeting ACS Polymer Division, Galveston, TX. Co-organizer with Dennis Smith and Kathleen Havelka.

- *Polymer Surfaces and Interfaces*, 235th American Chemical Society National Meeting, PMSE Division, New Orleans, LA April 2008, together with Profs. Jimmy Mays, Mark Dadmun, Grant Smith, and Mike Kilbey.
- *Stimuli Responsive Polymers*, 235th American Chemical Society National Meeting, Polymer Division, New Orleans, LA April 2008, together with Profs. Chris Weder, Stuart Rowan, Oren Scherman.
- *Conjugated Polymers and Hybrid Nanomaterials*, 234th American Chemical Society National Meeting, Polymer Division, Boston, MA August 2007, together with Prof. Klaus Muellen and Prof. Suresh Valiyaveetil.
- *Polymers Surfaces and Interface*, 233rd American Chemical Society National Meeting, Polymer and PMSE Division, Chicago, IL. April 2007, together with Prof. Al Cosby and Prof. Jeff Youngblood.
- *Smart Coatings*, Baltimore, MD, July 2007, together with Intertech Pira.
- *No Small Talks: Advances in Nanomaterials*, Quezon City, Philippines November 2006, together with Prof. Leon Payawan.
- *Nanoelectronics*, San Jose, CA, November 2006, together with Intertech Pira.
- *International Conference on Biorelated Polymers*, 230th American Chemical Society National Meeting, Polymer Division San Francisco September 2006, together with Prof. Ray Ottenbrite, San Francisco, CA.
- *Polymer Materials, Nanocomposites, and Interfaces*, 62nd Southwest Regional American Chemical Society Meeting, Houston, October 2006- in preparation.
- *Azobenzene Containing Smart Materials*, Pacificchem 2005, together with Prof. Tomiki Ikeda and Prof. Chris Barrett, Honolulu, HI.
- *The Future of Nanocoatings and Ultrathin Films*, Miami, Florida. April 2006.
- *Polyelectrolytes, Colloids, and Nanoparticles in Ultrathin Films*. 227th National American Chemical Society (ACS) Meeting, PMSE Division, together with Prof. Wolfgang Knoll, and Prof. Chris Barrett, Anaheim, CA 2004.
- *Polymer Brushes*. 225th National American Chemical Society (ACS) Meeting, PMSE and Polymer Division, together with Prof. Bill Brittain, and Prof. Juergen Ruehe, and Dr. Ken Caster New Orleans 2003.

2. Symposium Session Chairs:

- ICSM 2010, Kyoto, Japan. *Hierarchical Electronic Materials Symposium*.
- ICMAT 2007, Singapore. *Polymer and Molecular Electronics Symposium*.
- Pacificchem 2005, Honolulu, HI, *Supramolecular Thin Films and Devices* and *Azobenzene Containing Smart Materials* Symposia.
- ACS 230th National Meeting, San Francisco, CA, Polymer Division, *International Conference on Biorelated Polymers*,
- ACS 225th National Meeting, New Orleans, LA, POLY Division, *Crosslinking Materials and Processes*
- ACS 225th National Meeting, New Orleans, LA, PMSE Division, *Polymer Surfaces and Interfaces*
- ACS 224th National Meeting, Boston, MA, POLY Division, *Macromolecular Bioconjugates and Natural Biopolymers*

- ACS 222nd National Meeting, Chicago, IL. PMSE Division, *Light Scattering in Polymers*,
- ACS 221st National Meeting, San Diego, CAPMSE Division, *Symposium on Supramolecular Assemblies*
- 2002 MRS Fall Meeting, Boston, MA, *Defect-Mediated Phenomena in Ordered Polymers*
- 2001 MRS Fall Meeting, Boston, MA, *Polymer Thin Films*
- 2001 Gordon Conference, Newport, RI *Organic Thin Films*

3. Invited, Keynote, and Plenary Speaker: *ICSM 2010* July, Kyoto Japan. *Active Polymer Patterning 2009*, Dec., Gyeongju, Korea. *ASEAN Chemical Engineering Congress 2009*, December, Manila, Philippines. *PAT 2009* – October, Jerusalem, Israel. *Philippine Chemistry Congress 2009*, April Bohol, Philippines. *Molecular Electronics and Bioelectronics 2009* – April, Miyazaki, Japan 2009, *Smart Coatings 2009* – February, Orlando, FL. *Eurasia Chemistry Congress 2008*– January 2008, Manila, Philippines, *Smart Coatings 2008* - February, Orlando, Florida, *Hybrid Organic-Inorganic Materials Workshop 2008* – March, Ventura, CA, *Smart and Nanostructured Coatings 2008* – FSCT, April Orlando, FL. *POLYCOM 2008*, May, Galveston, TX, *Nanoscale Metrology and Materials*, Jamaican Bureau of Standards, 2008, May Jamaica. *IUPAC-Macro Polymer 2008*, July, Taipei, Taiwan, *Molecular Electronics and Devices 2008*, October-Pohang, Korea. *Stimuli-Responsive Coatings 2008* –October, Hattiesburg, MS. *Nanostructured Coatings 2008*, European Coatings Society, Berlin, Germany. *NanoKorea 2007*, August, Seoul, Korea, *Smart Coatings 2007*, July, Baltimore, MD, *18th Molecular Electronics & Devices Symposium*, Daejeon, Korea, May 2007, *Gordon Research Conference, Polymer West*, January, 2007. *Nanoelectronics* November 2006, *AsiaNANO2006*, November 2006, *XV International Materials Research Congress (MRS) in Mexico*, August 2006. *The Future of Nanocoatings and Ultrathin Films*, Miami, Florida. April 2006, *80th Colloids Division, American Chemical Society*, Boulder, Colorado. June 2006, *ISPAC*, Knoxville, TN, June 2006, *Smart Coatings 2006*, Orlando, FL, February 2006, *Pacificchem 2005*, Honolulu, HI, December 2005, *Singapore International Chemical Conference-4*, Singapore, December 2005, *Korean Chemical Society, Fall Meeting*, Wonju, Korea, October 2005, *Symposium on Nanotechnology 2005, Department of Chemistry, Mahidol University*, Bangkok, Thailand, September 2005, *Particles 2005*, San Francisco, CA., August, 2005, *International Conference on Frontiers of Polymers and Advanced Materials (ICFPAM)*, Cancun, Mexico, April 2005, *Singapore Molecular Electronics Conference*, Singapore, January 2005. *International Symposium on Organic Molecular Electronics. ISOME 2000*, Nagoya University, Nagoya, Japan, 2000, *Gordon Conference on Films and Coatings*, Colby-Sawyer College, New Hampshire, August 2004 and others.
4. Invited Contribution and Workshop Participant: *Keck Futures National Academies*, Participant and Contributor in *Imaging Science*, November 2010, Irvine, CA 2004. *NSF Molecular Electronics Workshop*, Washington, DC, July 2007. *Keck Futures NanoInitiative National Academies*, Participant and Contributor, Irvine, CA 2004. *NSF Materials Workshop*, Wilmington, DE, November 2002.
5. Planning Committees: IEEE 2006 Technical Program Committee (TPC) Member, IEEE International Frequency Control Symposium (IFCS) - Group 4. ChemInnovation 2011- Planning and Advisory Committee.
6. Panel and Site-visit Reviewer: *National Science Foundation*- IGERT Pre-proposal and Full Proposals, NSF-CAREER Panel, STC Site visit, MRSEC site visit, DMR Instrumentation (MRI), MWN

- Proposals, SBIR Panel, regular proposals. *Department of Energy, Center for Nanophase Materials Sciences (CNMS)-ORNL – Proposal Review Committee*
7. Peer-reviewer and Panel Review: for proposals from ACS-PRF, Department of Defense agencies (ARO, ONR, and AFOSR), NIH, NSF, Department of Energy, Department of State.
 8. Peer reviewer of Journal articles: *Nature, Nature Materials, Nature Chemistry, Nature Nanotechnology, Nanoletters, Journal of the American Chemical Society (JACS), Chemistry of Materials, Langmuir, Macromolecules, Journal of Physical Chemistry, B, ACS Applied Materials and Interfaces, ACS Nano, Advanced Materials, Advanced Functional Materials, Polymer, Nanoletters, Macro. Rapid. Comm., Chem. Comm., Tetrahedron Lett. Appl. Polymer Science, Polymer Chemistry Journal, Industrial and Eng. Chem. Research, Macromol. Chem. and Phys., Polymers for Advanced Technologies,, Journal of Org. Chem., Organic Letters, Biomacromolecules, Angewandte Chemie, Analytical Chemistry, Journal of Materials Research, Journal of Materials Chemistry, Journal of Materials Science, European Polymer Journal, Colloids and Surfaces: Physicochemical Engineering, B., Chemistry: Asian Journal, Electrochemica Acta, Journal of Biomaterials, Journal of Applied Polymer Science, Electrochemistry Communications, Journal of Luminescence, Macromolecular Chemistry and Physics, Nanotechnology, Polymer Engineering and Science, Sensors, Scanning, Proceedings Royal Society, Polymer Chemistry, Organic Electronics, International Journal of Nanotechnology, Chemistry-Asian Journal, Biosensors and Bioelectronics, J. of Controlled Release, Materials Letters, Reactive and Functional Polymers, J. Solid State Chemistry, New Chemistry Journal.*
 9. ACS Polymer Division Officer: Alternate Councilor (2009- present), Division Treasurer (2005 –2008) and Executive Committee Member. POLY Board representative to the Materials Secretariat Division 2003-2005.
 10. Philippine American Academy of Scientist and Engineers (PAASE) – Vice President 2011 and President-Elect 2012.
 11. Membership in Professional Societies: *Alexander von Humboldt Association of America, American Chemical Society, American Physical Society, American Vacuum Society, American Association for the Advancement of Science (AAAS), Society of Plastic Engineers Materials Research Society. Philippine American Academy of Scientist and Engineers (PAASE) – member.*
 12. Visiting Professorship: *Austrian Institute of Technology 2009, 2010, University of Paris 2009, National University of Singapore, 2004 and 2006, Max Planck Institute for Polymer Research, September-October 2006 and 1999, McGill University and University of Montreal, CSACS, July 2006, National University of Singapore, Department of Chemistry- April-June 2004, Tokyo University of Agriculture and Technology, VBL Program, 1997 and Nanotechnology Program-2003.*
 13. Award Winner: *Research Excellence Award UH 2007, FSCT Technical Speaker Award 2007, Best Poster Award, 227th ACS National Meeting, first runner up, March 2005. Arthur Doolittle Award, American Chemical Society, PMSE Division 2003. ACS Colloids Division,*
 14. Editorial and Advisory Board: *Macromolecules (2006-2009), Chemistry of Materials, Polymers for Advanced Technologies, Macromol. Chem. and Phys., Macromol. Rapid. Comm., Journal of Bioactive and Compatible Materials, Journal of Macromolecular Research, ACS: Applied Materials and Interfaces. Editor, Reactive and Functional Polymers.*
 15. ACS Polymer Division Officer; Chairman of the Chemistry Committee: *Alabama Academy of Sciences - 2000*

16. Chair, Local Section: American Chemical Society - AlabamaSection – 2001
17. National Chemistry Week Coordinator: American Chemical Society - AlabamaLocal Section Activities – 2001
18. Committee member: Alabama Space Grant Consortium - review of grant materials.

Others:

- Developed and taught courses in organic chemistry, polymer science, nanotechnology, biotechnology.
- Mentoring of undergraduate, graduate students and post-doctoral researchers (To date, he has mentored within his group a total of (past and current): 27 high school students, 45 undergraduate students, 2 Masters students, 30 Ph.D. students, 12 Postdoctoral scholars, 23 visiting foreign scholars, and 2 high school teachers). Outreach activities to high school students and teachers (K-12 education): AMP, REU, Project SEED, and Welch Foundation.
- Membership: American Chemical Society, Materials Research Society, Philippine-American Academy of Sciences and Engineering.
- Consultant to various companies including: Dow Corning, Agilent, Maxtek, Lintec, Kraton Polymers

PH.D. ADVISER:

Prof. Randy Duran, University of Florida (now Louisiana State University)

POST-DOCTORAL ADVISERS:

Prof. Curtis Frank, Stanford University

Prof. Wolfgang Knoll, Max Planck Institute for Polymer Research (now Austrian Institute of Technology)

COLLABORATORS:

Curtis Frank (Stanford University), Zhenan Bao (Stanford University), Wolfgang Knoll (AIT, Austria), Eunkyong Kim (Yonsei University), Daniel Roitman (Agilent), Jimmy Mays (Univ. of Tennessee), Jacques Le Moigne (CNRS), Hiroaki Usui (TUAT, Japan), Kiyotaka Shigehara (TUAT, Japan), Hiroyuki Nishide (Waseda Univ.), Futao Kaneko (Niigata Univ.), S. Valiyaveettill (NUS).