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EDUCATION

B.S., Chemistry, University of the Philippines-Diliman, Quezon City, Philippines, 1996
Ph.D., Chemistry, Georgia Institute of Technology, Atlanta, GA, 2002
Postdoc, Materials Science Division, Argonne National Laboratory, Argonne, IL, 2003-2005
Postdoc, Department of Pediatrics, School of Medicine, Case Western Reserve University, 2005-2010

APPOINTMENTS

2010-present **Assistant Professor**, Department of Chemistry, Case Western Reserve University, Cleveland, OH
2005-2010 **Research Associate**, Department of Pediatric Pulmonology, School of Medicine, Case Western Reserve University, Cleveland, OH
2003-2005 **Postdoctoral Fellow**, Argonne National Laboratory, Argonne, IL
2002-2003 **Laboratory Manager**, Center for Chemical Dynamics and Nanomaterials Research, Department of Chemistry, Case Western Reserve University, Cleveland, OH
1998-2002 **Research Assistant**, School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA
1996-1998 **Laboratory Instructor**, Institute of Chemistry, University of the Philippines-Diliman, Quezon City, PHILIPPINES

PUBLICATIONS

Independent Publications (Pre-Tenure):

2013

35. Popa, A.; Li, J.; **Samia, A.C.S.*** "Hybrid Pt Nanobox/Carbon Nanotube Composites for the Ultrasensitive Detection of Toxic Gases," *Small* (2013), to be accepted after minor revisions.
34. Publico-Lansigan, M.; Situ, S.F.; **Samia, A.C.S.*** "Magnetic Particle Imaging: Advancements and Perspectives for Real-Time *In Vivo* Monitoring and Image-Guided Therapy," *Nanoscale* (2013), DOI: 10.1039/c3nr00544e.

2012

33. Lin, P.-Y.; Cheng, K.-L.; McGuffin-Cawley, J.D.; Shie, F.-S.; **Samia, A.C.**; Gupta, S.; Cooney, M.; Thompson, C.T.; Liu, C.-C. "Detection of Alpha-Methyl-CoA Racemase (AMACR), Using a Biomarker of Prostate Cancer In Patient Blood Samples Using a Nanoparticle Electrochemical Biosensor," *Biosensors* (2012), 2(4), 377-387.
32. Ji, Y.; Lin, K.-C.; Zheng, H.; Zhu, J.-J.; **Samia, A.C.S.*** "Highly Ordered TiO₂ Nanotube Arrays with Double-Wall and Bamboo-Type Structures for Dye-Sensitized Solar Cells," *Nano Energy* (2012), 1(6), 796-804.
31. Feng, Z.; Zhu, S.; Martins de Godoi, D.R.; **Samia, A.C.S.**; Scherson, D. "Adsorption of Cd²⁺ on Carboxyl – Terminated Superparamagnetic Iron Oxide Nanoparticles," *Anal. Chem.* (2012), 84, 3764-3770.

2011

30. Janyasupab, M.; Liu, C.-W.; Zhang, Y.; Wang, K.-W.; Xu, J.; **Samia, A.C.**; Liu, C.-C. "Bimetallic Platinum Based Catalysts for Biosensors and Energy Storage Applications," *Curr. Top. Electrochem.* (2011), 16, 93-112.
29. Ji, Y.; Lin, K.-C.; Zheng, H.; Zhu, J.-J.; **Samia, A.C.S.*** "Fabrication of Double-walled TiO₂ Nanotubes with Bamboo Morphology via One-Step Alternating Voltage Anodization," *Electrochem. Comm.* (2011), 13, 1013-1015.

Post- and Pre-doctoral Publications:

28. Yu, C.; **Samia, A.C.S.**; Li, J.; Kenney, M.E.; Resnick, A.; Burda, C. "Delivery and Efficiency of a Cancer Drug as a Function of the Bond to the Gold Nanoparticle Surface," *Langmuir* (2010)," 6(4), 2248–2255.
27. Yu, C.; **Samia, A.C.S.**; Meyers, J.D.; Panagopolus, I.; Fei, B.; Burda, C. "Highly Efficient Drug Delivery with Gold Nanoparticle Vectors for *in Vivo* Photodynamic Therapy of Cancer," *J. Am. Chem. Soc.* (2008), 130 (32), 10643-10647.
26. Clouser, S.; **Samia, A.C.S.**; Novak, E.; Aldred, J.; Burda, C. "Visible-Light Photodegradation of Higher Molecular Weight Organics on N-doped TiO₂ Nanostructured Thin Films," *Top. Cat.* (2008), 47(1-2), 42-48.
25. Dayal, S.; Li, J.; Li, Y.-S.; Wu, H.; **Samia, A.C.S.**; Kenney, M.E.; Burda, C. "Effect of the Functionalization of the Axial Phthalocyanine Ligands on the Energy Transfer in QD-based Donor-Acceptor Pairs," *Photochem. Photobiol.* (2008), 84(1), 243-249.
24. Dayal, S.; Lou, Y.; **Samia, A.C.S.**; Berlin, J.C.; Kenney, M.E.; Burda, C. "Observation of Non-Förster Type Energy Transfer Behavior in Quantum Dot-Phthalocyanine Conjugate," *J. Am. Chem. Soc.* (2006), 128(43), 13974-13975.
23. **Samia, A.C.S.**; Schlueter, J.A.; Jiang, J.S.; Bader, S.D.; Qin, C.J.; Lin, X.M. "Effect of Ligand-Metal Interactions on the Growth of Transition Metal and Alloy Nanoparticles," *Chem. Mater.* (2006), 18, 5203-5212.
22. **Samia, A.C.S.**; Dayal, S.; Burda, C. "Quantum Dot Based Energy Transfer: Perspectives and Potential Applications in Photodynamic Therapy," *Photochem. Photobiol.* (2006), 82(3), 617-625.
21. Lin, X.M.; **Samia, A.C.S.** "Synthesis, Assembly and Physical Properties of Magnetic Nanoparticles," *J. Magn. Magn. Mater.* (2006), 305(1), 100-109.
20. Qiu, X.; Lou, Y.; **Samia, A.C.S.**; Devadoss, A.; Burgess, J.D.; Dayal, S.; Burda, C. "PbTe Nanorods by Sonoelectrochemistry," *Angew. Chem. Int. Ed.* (2005), 44(36), 5855-5857.
19. **Samia, A.C.S.**; Hyzer, K.; Jin, Q.J.; Schlueter, J.A.; Jiang, S.; Bader, S.; Lin, X.M. "Ligand Effects on the Growth and Digestion of Co Nanocrystals," *J. Am. Chem. Soc.* (2005), 127(12), 4126-4127.
18. **Samia, A.C.S.**; Lin, X.M. "Self-assembled Structures," *Dekker Encyclopedia of Nanoscience and Nanotechnology* (2005), July 18, 1-14.
17. Chen, X.; **Samia, A.C.S.**; Lou, Y.; Burda, C. "Investigation of the Crystallization Process in 2 nm CdSe Quantum Dots," *J. Am. Chem. Soc.* (2005), 127(12), 4372-4375.
16. Chen, X.; Lou, Y.; **Samia, A.C.S.**; Burda, C.; Gole, J.L. "Formation of Oxynitride as the Photocatalytic Enhancing Site in Nitrogen-Doped Titania Nanocatalysts: Comparison to a Commercial Nanopowder," *Adv. Funct. Mat.* (2005), 15(1), 41-49.
15. Anderson, R.M.; Vestal, C.R.; **Samia, A.C.S.**; Zhang, Z.J. "Faraday Rotation in Co_{0.85}Zn_{0.15}Fe₂O₄ Spinel Ferrite Nanoparticulate Films under Low Applied Fields," *Appl. Phys. Lett.* (2004), 84(16), 3115-3117.
14. **Samia, A.C.S.**; Lou, Y.; Senter, R.; Coffey, J.L.; Burda, C. "Effect of Erbium-dopant Architecture on the Non-radiative Carrier Relaxations in Silicon Nanoparticles," *J. Chem. Phys.* (2004), 120(18), 8716-8723.
13. **Samia, A.C.S.**; Cody, J.; Fahrni, C.; Burda, C. "The Effect of Ligand Constraints on the Metal-to-Ligand Charge-Transfer Relaxation Dynamics of Copper (I)-Phenanthroline Complexes: A Comparative Study by Femtosecond Time-Resolved Spectroscopy," *J. Phys. Chem. B* (2004), 108(2), 563-569.
12. **Samia, A.C.S.**; Chen, X.; Burda, C. "Semiconductor Quantum Dots for Photodynamic Therapy," *J. Am. Chem. Soc.* (2003), 125(51), 15736-15737.
11. Morris, R.; Azizuddin, K.; Kenny, M.; **Samia, A.C.S.**; Burda, C.; Oleinick, N. "Fluorescence Resonance Energy Transfer Reveals the Binding Site of a Photosensitizer for Photodynamic Therapy," *Cancer Research* (2003), 63(17), 5194-5197.
10. Burda, C.; Lou, Y.; Chen, X.; **Samia, A.C.S.**; Stout, J.; Gole, J.L. "Enhanced Nitrogen Doping in TiO₂ Nanoparticles," *Nano Lett.* (2003), 3(8), 1049-1051.
9. Chen, X.; Lou, Y.; **Samia, A.C.S.**; Burda, C. "Coherency Strain Effects on the Optical Response of Core/Shell Heteronanostructures," *Nano Lett.* (2003), 3(6), 799-803.

8. Lou, Y.; **Samia, A.C.S.**; Cowen, J.; Banger, K.; Chen, X.; Lee, H.; and Burda, C.; "Evaluation of the Photoinduced Electron Relaxation Dynamics of Cu_{1.8}S Quantum Dots," *Phys. Chem. Chem. Phys.* (2003), 5(6), 1091-1095.
7. Lou, Y.; Chen, X.; **Samia, A.C.S.**; Burda, C. "Femtosecond Spectroscopic Investigation of the Carrier Lifetimes in Digenite Quantum Dots and Discrimination of the Electron and Hole Dynamics via Ultrafast Interfacial Electron Transfer," *J. Phys. Chem. B* (2003), 107(45), 12431-12437.
6. Burda, C.; **Samia, A.C.S.**; Hathcock, D.; Huang, H.; Yang, S. "Experimental Evidence for the Photoisomerization of Higher Fullerenes," *J. Am. Chem. Soc.* (2002), 124(42), 12400-12401.
5. **Samia, A.C.S.** "Design and Control of the Superparamagnetic Properties of Cobalt-based Spinel Ferrite Nanoparticles," (2002), 161 pp.
4. Rondinone, A.J.; **Samia, A.C.S.**; Zhang, Z.J. "A Chemometric Approach for Predicting the Size of Magnetic Spinel Ferrite Nanoparticles from the Synthesis Conditions," *J. Phys. Chem. B* (2000), 104(33), 7919-7922.
3. Rondinone, A.J.; **Samia, A.C.S.**; Zhang, Z.J. "Characterizing the Magnetic Anisotropy Constant of Spinel Cobalt Ferrite Nanoparticles," *Appl. Phys. Lett.* (2000), 76(24), 3624-3626.
2. Rondinone, A.J.; **Samia, A.C.S.**; Zhang, Z.J. "Superparamagnetic Relaxation and Magnetic Anisotropy Energy Distribution in CoFe₂O₄ Spinel Ferrite Nanocrystallites," *J. Phys. Chem. B* (1999), 103(33), 6876-6880.
1. Cruz, S.; **Samia, A.C.S.**; Arco, S.; De Guzman, F.; Chua, C.; Cruz, N.; Ursos, L.M. (1998) *Organic Chemistry Laboratory Manual 2nd Edition*, Diliman, Quezon City: UP Press.

FUNDING

1. *Title:* CAREER- Magnetic Imaging Guided Composite Materials Development
Role: **PI**
Agency: NSF
Period: 02/01/2013 – 01/31/2018
Amount: \$600,000
2. *Title:* Development of Magnetic-Plasmonic Nanoparticle Sensors for the Apprehension, Removal and Treatment (ART) of Microbial Contamination in Water – Successful 2nd Year Renewal
Role: **PI**
Agency: NASA
Period: 08/01/2011 – 07/31/2013
Amount: \$132,000
3. *Title:* Controlled Assembly of Core-Shell Viral Nanoparticles for Image Guided Therapy
Role: **PI** (w/ Steinmetz, BME)
Agency: CWRU – Provost, Interdisciplinary Alliance Grants
Period: 08/01/2011 – 07/31/2013
Amount: \$50,000 (share \$25,000)
4. *Title:* Monitoring Implant Degradation Using Magnetic Particle Imaging
Role: **PI** (w/ Brown, Physics and Griswold, Radiology)
Agency: CWRU – IAM, Imaging for Biomaterials Development
Period: 08/01/2011 – 12/31/2013
Amount: \$25,000 (share \$10,000)
5. *Title:* LOXL2 Biosensors: Novel Instruments to Detect the Development, Metastatic Progression, and Recurrence of Triple-Negative Breast Cancers
Role: **co-I** (PI: W. Scheimann, Gen. Med. Sci.-Oncology)
Agency: CWRU – CTSC/Coulter Pilot Grant
Period: 08/01/2012 – 07/31/2013
Amount: \$25,000 (share \$1,000)
6. *Title:* Synthesis of High Energy Density Magnetic Nanorods and Nanowires
Role: **PI**
Agency: CWRU – (Summer Undergraduate Research in Energy and Sustainability) SURES
Period: 05/23/2011 – 07/29/2011
Amount: \$3,500

7. *Title:* Collaborative and Exchange Program Between Case Western Reserve University and the University of the Philippines
Role: **PI** (w/ Advincula, MACRO)
Agency: CWRU – Center for International Affairs
Period: 08/01/2012 – 07/31/2013
Amount: \$5,000 (share \$2,500)
8. *Title:* Collaborative and Exchange Program Between Case Western Reserve University and Hanoi National University of Education (HNUE)
Role: **co-PI** (PI: Burda, Chemistry)
Agency: CWRU – Center for International Affairs
Period: 08/01/2013 – 07/31/2014
Amount: \$7,500 (share \$3,750)

HONORS AND ACHIEVEMENTS

- NSF CAREER Award 2013
- Nominated for the Diekhoff Excellence in Graduate Mentoring Award 2012
- Recipient of the 2008 Frederick Urbach Memorial Travel Award
- Authored the Number 1 of the TOP 25 Hottest Articles downloaded during July, August and September, 2006 of the Journal of Magnetism and Magnetic Materials
- Molecular Design Institute Graduate Fellowship (1999)
- University of the Philippines (1996) – *Magna Cum Laude*
- Philippines Department of Science and Technology Scholar (1992-1996)
- Quezon City Government Scholar (1992-1996)
- Quezon City Science High School (1992) – *Salutatorian*

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

Case Western Reserve University:

- Co-organizer of “Magnetism in Medicine” Chemistry Frontiers Seminar Series for Fall 2012
- Member of the Graduate Recruiting Committee
- Member of the Undergraduate Recruiting Committee
- Member of the Analytical Chemistry Foundations Course Committee
- Member of Case Center for Imaging Research
- Member of the Institute for Advanced Materials
- Member of the Alpha Chi Sigma Chemistry Fraternity (Gamma Chapter)
- **Co-Founder/Owner of BioCase Diagnostic LLC** (with Prof. C.C. Liu, Prof. C. Thompson and Prof. M. Cooney)

Others:

- Member of the American Chemical Society
- Member of the American Society for Photobiology
- Member of the Philippine Environmental Mutagen Society
- Member of the Phi Kappa Phi Honor Society
- Certified User in Brookhaven National Laboratory (NSLS) and Argonne National Laboratory (APS, EM, IPNS)
- Philippine-American Academy of Science and Engineering Elected Member
- Member of the Editorial Board of the Journal of Pharmaceutics
- Member of the International Advisory Board of Kimika
- Co-Organizer of the upcoming 2013 International Workshop in Magnetic Particle Imaging
- Co-Organizer and Session Chair of a Symposium on the upcoming 2013 Spring MRS Meeting
- Reviewer for the Journal of the American Chemical Society, Langmuir, Journal of Colloid and Polymer Science, Electrochemistry Communications, Chemistry of Materials

STUDENT ADVISEES

Graduate and Post-graduate Students (*All students beyond their 1st year have been fully supported as Research Assistants*):

Dr. Michele Pablico (December 2011 – present)
Yajun Yi (exchange student from Nanjing University, PRC, 2010-2011)
Shun Zhu (M.S., Mat. Sci. Eng. w/ Thesis, Graduated Dec. 2011, 2010-2011)
Keng-Chu Lin (Ph.D. Mat. Sci. Eng, 2010-2011)
Adriana Popa (Ph.D, Chemistry, 2010-present)
Shu Situ (Ph.D., Chemistry, 2011-present)
Jon Flikkema (Ph.D., Chemistry, 2011-2012)
Shuang Qin (M.S., Chemistry, 2012-present)
Meng Zhao (Ph.D., Chemistry, 2012-present)
Eric Abenojar (Ph.D., Chemistry, 2012-present)

Undergraduate Students:

Ricardo Vidot (B.S. Chem., 2010)
Hirsh Pujara (B.A. Chem., 2010-2011)
Kara Walgren (B.A. Chem., 2010-2011)
Steven Wu (B.S. Chem., 2011-2012)
Amy Coe (B.S. Chem., 2011-present)
Mark Raymundo (B.S Biochem., 2012)
Angela Crise (B.S. Chem., 2012-present)

High School Students:

Margareth McConnell (Laurel High School, Summer 2011)
Lilly Faulk (West Geauga High School, Summer 2012)
Maryam Bagheri (Cleveland Heights High School, Summer 2012)
Julie dela Pena (ACS SEED, Summer 2012)

STUDENT AWARDS

Adriana Popa –NASA Fellowship, 2010-present
Kara Wahlgren – SURES Summer Undergraduate Fellowship, 2011
Angela Crise – Best in Physical Chemistry Award, 2012
Shu Situ – Teaching Excellence Award, 2012
Jon Flikkema – Teaching Excellence Award, 2012
Shu Situ – GAANN Fellowship, 2012-2013

OUTREACH ACTIVITIES

Domestic:

- 2010 – present, Laboratory Host to “Introduce a Girl to Science Day” involving middle school and high school students in the Cleveland School District
- 2010 – present, Mentor and Laboratory Host to Laurel School High School Students as part of their “Protégé Research Experience Program”
- 2012, Mentor and Laboratory Host to an ACS-SEED High School Student
- Faculty Mentor to Graduate Student Members of the Women in Science and Engineering Roundtable (WISER)

International:

- 2012 – present, working with Prof. Advincula (Macro) in establishing a Student Exchange program between CWRU and the University of the Philippines
- 2013, working with Prof. Burda (Chemistry) in establishing a Student Exchange program between CWRU and the Hanoi National University of Education