

Curriculum Vitae

Saravanan Ramasamy, Ph.D.
Assistant Professor
Department of Chemistry and Biochemistry
Angelo State University

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EDUCATION

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| Postdoctoral Fellow - Teaching and Research
University of Oklahoma, Norman, OK
Department of Chemistry and Biochemistry | July 2015 – July 2017 |
| Ph.D. in Organic Chemistry
University of Oklahoma, Norman, OK
Department of Chemistry and Biochemistry | August 2009 - May 2015 |
| Master of Science in Chemistry
Bharathiar University, Coimbatore, India | July 2006 - May 2008 |
| Bachelor of Science in Chemistry
Bharathiar University, Coimbatore, India | July 2003 - May 2006 |

TEACHING EXPERIENCES

Angelo State University, San Angelo, TX

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| Assistant Professor
Organic Chemistry I and II | Fall 2017 – Present |
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- Teach two lecture sections and three lab sections of CHEM3451 Organic Chemistry –I in fall semesters
 - Teach two lecture sections and three lab sections of CHEM3452 Organic Chemistry –II in spring semesters

University of Oklahoma, Norman, OK

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| Postdoctoral Fellow - Teaching
Organic Chemistry I and II – Biological Emphasis | Fall 2015 – Summer 2017 |
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- Lectured to a class of 250 students each semester
 - Created syllabi, quizzes, online assignments, projects and exams
 - Used innovative teaching technologies like digital whiteboard, iPad animation, interactive textbook, and iClicker
 - Created lecture videos and post them on university media website
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| Instructor of Laboratory Course
Organic Chemistry Laboratory – Biological Emphasis | Spring 2014 – Fall 2014 (including summer term) |
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- Lectured to a class of 275 junior and senior undergraduate students each semester
 - Created lab and lecture syllabi, quizzes, assignments, and exams
 - Prepared discussion questions and grading rubrics for students' lab reports for each experiment
 - Developed and implemented "Teaching with iPad" technique
 - Adopted iBook version of the lab manual (free for students) and contributed to its further development
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| Head Teaching Assistant
Organic Chemistry Laboratory Courses – Major and non-major | Spring 2014 – Fall 2014 (including summer term) |
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- Assigned duties and make schedules for teaching assistants and proctors
- Supervised 11 organic lab sections each semester and ensured students' safety in the lab
- Supervised 12 teaching assistants, trained them on lab techniques and resolved workplace conflicts
- Organized weekly GTA meetings, made lesson plans and contributed to course reform and development
- Developed lab protocols and safety policies that became a standard for all lab courses in the department

Lecture Teaching Assistant Fall 2013 – Spring 2014

Organic Chemistry I and II – Honors and Regular Classes

- Assisted professors in lectures and created exams
- Led group discussions and helped students understand problems

Laboratory Teaching Assistant Fall 2009 - Fall 2013

Organic Chemistry and General Chemistry Laboratories

- Taught organic major and non-major labs for four years (14 sections)
- Taught general chemistry I and II labs for two semesters

RESEARCH EXPERIENCE

Assistant Professor – Research Duties Fall 2017 – Present

Department of Chemistry and Biochemistry, Angelo State University, San Angelo, TX

Research in multidisciplinary topics: Nanoparticles, Fluorescence Enhancement, Organic Synthesis and Chemical Education.

- Current students research student who received Welch Undergraduate Research Scholarship
 - Tamara Womack, Mackenzie Weaver, Johan Bethune, Kylie Harman

Postdoctoral Fellow – Research Fall 2015 – Summer 2017

Department of Chemistry and Biochemistry, University of Oklahoma, Norman, OK

Course Development – Organic Chemistry Major and Non-major Laboratories

- Developed and implemented new experiments for undergraduate organic labs that benefit 250 students each semester.
 - Microwave-assisted Diels-Alder reaction – to study the effect of conformation, substituent, and reaction temperature on the rate of the reaction (using digital and quantitative TLC analysis)
 - Microwave-assisted Claisen and Dieckmann condensation – to study the factors affecting the rate of reactions
 - Esterification of benzyl alcohol – to study the effect of reaction time, temperature and catalyst on the yield of the reaction
- Installed, maintained and trouble-shoot new instruments in teaching laboratories
 - Advion TLC and LC-Mass Spectrometer
 - CEM Microwave Mars-6 Reactor
 - Vernier Compact Gas Chromatograph with LoggerPro
 - Vernier Compact UV-Vis Spectrometer
 - Digital TLC Analyzer
- Created protocol and standard operating procedure for all of the above new instruments
- Coordinated with several other lab courses to promote the use of new instruments
- Mentored senior undergraduate students in my research and supervise graduate research assistants
- Developed organic lab manual for laboratory courses
- Revised safety protocols for organic teaching labs and maintain the inventory of chemicals and equipment

Ph.D. Dissertation

Jan 2010 – May 2015

Department of Chemistry and Biochemistry, University of Oklahoma, Norman, OK

“Metal-enhanced fluorescence of gold nanoparticle and silica layered CdSe/ZnS quantum dot aggregates”

Advisor: Prof. Ronald L. Halterman

Funded by National Science Foundation

- Studied surface plasmon resonance property of metal nanoparticles to modify photophysical property of nearby fluorophores
- Synthesized gold nanoparticles of different sizes and characterized using transition electron microscopy
- Synthesized fluorescent CdSe/ZnS quantum dots of different sizes and encapsulated them in silica shell
- Examined the photo-stability and size-tunable emission of the quantum dots
- Synthesized organic photo-sensitive compounds to anchor the gold nanoparticles on silica surface
- Analyzed effect of proximity, size, and concentration of gold nanoparticles on emission of quantum dots
- Obtained TEM/SEM images, fluorescence, UV/Vis, NMR and Mass spectra

Laboratory Supervision

2012 - 2015

Halterman Lab, University of Oklahoma, Norman, OK

- Mentored and trained undergraduate students in research program for organic synthesis
- Supervised new graduate and undergraduate students
- Maintained responsibility for safety in lab, inventory and chemical waste management

Research in Chemical Education

Spring 2011

University of Oklahoma, Norman, OK

“Comparing Carbonyl Chemistry in Comprehensive Introductory Organic Chemistry Textbooks”

Funded by National Science Foundation

Summer Research Fellowship

Summer 2008

University of Hyderabad, Hyderabad, India

“Efficient molecular organic solar cells; synthesis of 4,4'-bis(diphenylmethyl)biphenyl systems”

Funded by Indian Academy of Sciences

Master Thesis

2006 - 2008

SRMV College of Arts and Science, Bharathiar University, Coimbatore, India

“Removal of Heavy Metals from Aqueous Solution using Polyaniline as Adsorbent”

Funded by University Grant Commission of India

TECHNICAL TRAINING AND PROFESSIONAL SKILLS

- Trained to independently operate TEM/SEM electron microscopes (Zeiss10 and JEOL2000)
- Trained to independently operate the NMR facilities (300, 400 and 600 MHz)
- Proficient in UV-Vis, fluorescence and IR spectroscopy
- Expert in organic lab techniques like microscale synthesis, high-temperature reactions, solvent distillation, thin layer, column, and gas chromatography
- Expert in software like MestRenova NMR, ACD NMR, iSpartan, ChemBioOffice, ImageJ and Photoshop

FELLOWSHIPS AND AWARD**Summer Research Fellowship**

2008

Indian National Science Education Panel, India

Master Project Fellowship

2007-2008

Tamil Nadu State Government Council of Science and Technology, India

Outstanding Student Award

2005-2006

PSG College of Arts and Science, Bharathiar University, Coimbatore, India

PUBLICATION

Nelson, D.J., Kumar, R., and **Ramasamy, S.** "Comparing Carbonyl Chemistry in Comprehensive Introductory Organic Chemistry Textbooks" *Journal of Chemical Education* **2015**, 92 (7), 1171-1177

PRESENTATIONS

Ramasamy, S. and Halterman R. L. (2014). "Metal-enhanced fluorescence of gold nanoparticle and silica layered CdSe/ZnS quantum dot aggregates", Paper presented at the 247th American Chemical Society National Meeting (2014)

Ramasamy, S., Nelson, D.J., and Kumar, R. "Comparing Carbonyl Chemistry in Comprehensive Introductory Organic Chemistry Textbooks", Paper presented at the 247th American Chemical Society National Meeting (2014)

Nelson, D.J., Nguyen, T., **Ramasamy, S.**, Hastings, W., Rather, S. "Comparing Concepts Across Introductory Organic Chemistry Textbooks: Cyclohexane Conformers, Carbonyl Reactions, and Substitution Versus Elimination", Poster presented at the South West Regional Meeting – American Chemical Society (2012)

Womack, T., **Ramasamy, S.**, "Study of Effect of Distance on the Metal Enhancement Fluorescence of CdSe Quantum Dots", Poster Presented at ACS Southwest Regional Meeting (2018)

Weaver, M., **Ramasamy, S.**, "Study of Influence of Size and Relative Concentration Gold Nanoparticles and CdSe Quantum Dots on Metal Enhancement Fluorescence", Poster Presented at ACS Southwest Regional Meeting (2018)

Weaver, M., **Ramasamy, S.**, "Study of Influence of Size and Relative Concentration Gold Nanoparticles and CdSe Quantum Dots on Metal Enhancement Fluorescence", Poster Presented at ASU Research Symposium, Angelo State University, San Angelo, TX (2019)

Ellzey, L., **Ramasamy, S.**, "Synthesis of gold nanoparticles and place exchange study of ligands on gold surface", Poster Presented at ASU Research Symposium, Angelo State University, San Angelo, TX (2019)

RESEARCH GRANTS

Texas A&M Engineering and Experiment Station (TEES) grant awarded for the research project "Synthesis and Characterization of Quantum Dots" (2019)

EDITORIAL EXPERIENCE

Scientia – Editor, 2006

PSG College of Arts and Science, Bharathiar University, Coimbatore, India

- Launched the first edition of Scientia, a college-level interdisciplinary science monthly
- Served as the editor and wrote the first editorial of Scientia Magazine

LEADERSHIP AND ADMINISTRATION SKILLS

Secretary and Trustee Kavitha Vidyalaya Middle School / Kavitha Education Trust and Charity, Tiruppur Dt, TN, India (2006-present)

- Serve as a chief administrator in developing and implementing policies, programs, curriculum activities, and budgets to promote the educational development of students in our native town and the professional development of our staff

Co-Founder of Science Forum PSG College of Arts and Science, Coimbatore, TN, India (2004 - 2006)

- Took initiative, developed ideas, implemented strategic plans for the successful launch of Science Forum, a college level association for science majors
- Organized classroom presentations, delivered innovative and cheerful talks to constantly engage around 100 students in this forum for science awareness

Organizer of FOCUS '06, A National Science Day Celebration, PSG College of Arts and Science (2006)

- Fundraised and organized Focus'06, an intercollege symposium to celebrate the National Science Day
- Signed certificates to the winners and participants

Student Secretary, Department of Chemistry, PSG College of Arts and Science (2004 - 2005)

- Organized industrial visits, guest lectures and seminars
- Represented the chemistry department of PSG College in national and state level symposia and other events

Organizer of ChemFusion'07, A State Level Chemistry Symposium, SRMV College of Arts and Science (2007)

- Proposed, fundraised and successfully organized a state level chemistry symposium, ChemFusion'07
- Built a productive team of 42 graduate students, and led 8 committees to accomplish the organizational objectives
- Hosted around 120 student participants and 15 guest faculties from 21 colleges