

Dr. SASIREKA KS

Assistant Professor - PG Department of Chemistry

Area of Specialization : Material Chemistry

Research Interests : Nano Phyto Chemistry — Nanomaterials — Sustainable and Bio-Mimic Applications



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Vidwan ID : 728412 **h- intex:** 3 **i10- intex :** 3

Education	Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore	India
	PhD in Chemistry	Jan 2018 - Jan 2022
	Mentor: Prof. Lalitha Pottail	
	Ph.D Project: Phyto-mediated Synthesis, Characterization, and Selected Applications of Au@Ag Bimetallic Nanoparticles	
	The Gandhigram Rural Institute, Dindigul	India
	M.Phil in Chemistry First Class	Aug 2016 - Aug 2017
	Mentor: Prof.S.Abraham John	
	M.Phil Dissertation Title: Synthesis, characterization, and electrocatalytic activity of graphene quantum dots (GQDs)	
	M.V.M Govt. Arts College for Women, Dindigul	India
	M.Sc in Chemistry First Class with Distinction	June 2014 - April 2016
	M.Sc Dissertation Title: Green synthesis of violet-blue emitting silver nanoparticles for applications in UV-LED based phototherapy illuminators by electrochemical method	
Work Experience	Arulmigu Palanianadvar Arts College for Women, Palani	India
	B.Sc in Chemistry First Class with Distinction	June 2011 - April 2014
	Government Girls Higher Secondary School, Palani	India
	HSC	March 2011
	Government Girls Higher Secondary School, Palani	India
	SSLC	March 2009
Work Experience	APA College for Women	Palani, India
	Assistant Professor	Dec. 2025- till date
	PSGR Krishnammal College for Women	Coimbatore, India
	Assistant Professor	Mar. 2022 - Nov. 2024
	Mother Teresa Women's University	Kodaikanal, India
Work Experience	Assistant Professor	Aug. 2017 - Nov. 2017

Article Order Peer Reviewed International Journal Publications

- 1 **Sasireka KS.**, Lalitha P., Fabrication of Biomimetic Hydrophobic Surfaces Using Phyto-Polymers and their Bimetallic Au@Ag Nanoparticles

- 2 **Sasireka KS.**, Lalitha P., Green synthesis of bimetallic Ag@Au nanoparticles with aqueous fruit latex extract of *Artocarpus heterophyllus* and their synergistic medical efficacies
Applied Nanoscience (Vol. 11)
<https://doi.org/10.1007/s13204-020-01657-8> 2021
- 3 **Sasireka KS.**, Lalitha P., Biogenic synthesis of bimetallic nanoparticles and their applications
Review in Inorganic Chemistry (Vol. 4)
DOI/Link: <https://doi.org/10.1515/revic-2020-0024> 2021
- 4 Suruthika B., Poonkothai M., Lalitha P., **Sasireka KS.**, Synthesis of nano-silver from *Navicula cincta* and the evaluation of its antimicrobial activity
Micro-Nano Letters (Vol.1)
DOI/Link: <https://doi.org/10.1049/mnl.2019.0365> 2019
- 5 **Sasireka KS.**, Lalitha P., Brine Shrimp Lethality Bioassay of *Alternanthera sessilis*
Asian Journal of Multidimensional research (Vol. 7)
DOI/Link: ISSN online 2278-4853 2018
- 6 Smina CS., Lalitha P., **Sasireka KS.**, Traditional herb *Helicteresisraarbitrate* nanocomposite synthesis and its anti-cancer potency against breast cancer cell lines
Asian Journal of Multidimensional research (Vol. 7)
DOI/Link: ISSN Online 2278-4853 2018
- 7 N Baby., Manjula P., Manonmani., **Sasireka KS.**, Surface Characterization Studies of 2-Amino 4, 6-Dimethyl Pyrimidine (ADMP) in Neutral Chloride Medium
Int. J. of Innov. Res. in Sci. Eng. and Tech. (Vol. 6)
DOI/Link: <https://www.ijirset.com/upload/2017/june/115surface.PDF> 2018
- 8 **Sasireka KS.**, Shanthi M., Rajendran S., Green synthesis of violet-blue emitting silver nanoparticles for applications in UV-LED based phototherapy illuminators by Electrochemical method
Int. J. Nano Corr. Sci. and Engg. (Vol. 5)
DOI/Link: ISSN Online 2395-7018 2015
- 9 Shanthi M., **Sasireka KS.**, Rajendran S., Electrochemical decolorization of a blue dye by positive chloride ion produced in-situ
Int. J. Nano Corr. Sci. and Engg. (Vol. 5)
DOI/Link: ISSN Online 2395-7018 2015

Article Order International Conference Paper Presentations

- 1 **Sasireka KS.**, Lalitha P., *In vitro* bioefficacy of bio-inspired bimetallic Gold@Silver nanoparticles using *Amaranthus polygonoides* / *Amaranthus dubius* leaf extracts
International Conference on Transdisciplinary Research in Life Science: Perspectives and Prospects, Kristu Jayanthi College, Bengaluru, India 2024

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| 2 | Sasireka KS. , One-pot green Synthesis, Characterization and anti-microbial activity of Graphene and Nitrogen-doped graphene quantum dots
<i>Recent Trends in Materials and Magnetism (RTMM-22), Loyola College, Chennai, India</i> | 2022 |
| 3 | Sasireka KS. , Lalitha P., Prospects and biomedical applications of nanobiology
<i>National Conference on Recent Trends in Chemistry 2020 (RTC'20), Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, India</i> | 2020 |
| 4 | Sasireka KS. , Lalitha P., Green synthesis of Au-Ag Bimetallic NPs using <i>Artrocarpus heterophyllous</i> Latex
<i>National Conference on Technology in Telehealth care and dietetics, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, India</i> | 2019 |
| 5 | Sasireka KS. , Lalitha P., Brine Shrimp Lethality Assay to test anti-tumor studies of selected medicinal plants
<i>International Conference on Expanding Horizons in Health, Disease and Pharmaceuticals E(H2)DP, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, India</i> | 2019 |
| 6 | Sasireka KS. , Lalitha P., Brine shrimp Lethality Bioassay of <i>Alternanthera sessilis</i>
<i>National conference on Challenges and Sustainable Approaches towards Food and Nutrition Security- A Global Perspective, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, India</i> | 2018 |
| 7 | Sasireka KS. , Lalitha P., Superhydrophobicity - A Review on applications
<i>National Seminar on Recent Innovations in Science and Technology (RIST 2018), Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore, India</i> | 2018 |

International Journal of Environmental Analytical Chemistry	Taylor/ Francis	From 2022
Materials Chemistry Frontiers	Royal Society of Chemistry	From 2024
Chemistry of Materials	American Chemical Society	From 2024
ACS Energy Letters	American Chemical Society	From 2024
SmartMat	Wiley	From 2024
Chem	Cell Press	From 2024
eScience	Elsevier	From 2024

UG Admission AY: 2023-2024

TGA Instrument Consultancy AY: 2022-2023; 2023-2024

- Editorial Board member Science New Letter AY:2023-

- e-content : Design Thinking Paper

Basics of High-Resolution Imaging Techniques and Their Applications to Science and Technology: CSIR-Central Electrochemical Research Institute, Karaikudi, India

Analytical Skills acquired	Operating/interpreting analytical knowledge using instruments like UV-Visible Spectra, Fluorescence Spectra, FT-IR, Thermogravimetric analysis, Plasma Chamber, Particle size analyzer, Electrochemical analysis, Profilometer, Thin Layer Chromatography, and Column Chromatography, FESEM, XRD, TEM, TGA, PSA, Contact angle measurement
Online Courses	• Introduction to Molecular Spectroscopy: The university of Manchester- Coursera • Organic Solar cells-Theory and Practice: Technical University of Denmark - Coursera • Introduction to Forensic Science : Nanyang Technological University, Singapore - Coursera • Microbiology Laboratory Techniques (Phase I) : Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India, Biotechnology Society of Nepal (BSN), Laboratory of Chemical and Biological Analysis (LAQB), Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil • Medically Important Bacteria (Phase II): Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India, Biotechnology Society of Nepal (BSN), Laboratory of Chemical and Biological Analysis (LAQB), Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil • Chromatography – An Overview (Phase I): Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India, Biotechnology Society of Nepal (BSN), Laboratory of Chemical and Biological Analysis (LAQB), Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil
Outline of PhD Work	(1) The plasmonic Au@Ag bimetallic nanoparticles biogenically synthesized from the aqueous extracts of <i>Alternanthera sessilis</i>, <i>Amaranthus polygonoides</i>, <i>Amaranthus dubius</i>, <i>Artocarpus heterophyllus</i> and <i>Mimosa elengi</i> (2) Green route syntheses of silver and gold metals with complex bioorganic molecules in plant extracts promote greater biocompatibility, non-toxicity, and less side effects, qualifying them as the best anti-bacterial, anti-oxidant, and cytotoxic agents (3) In addition, bio-inspired mimetic-modified surfaces exhibit excellent hydrophobicity and qualify them for anti-icing and anti-corrosive industrial applications
Project Work Guided (Mentor)	PG and UG - (1) Silver Nanoparticles Synthesized from Banana Bract Extracts: Approach to Combat Dandruff; (2) Facile Synthesis of diamide functionalized graphene quantum dots; (3) Green Synthesis of metal nanoparticles using the aqueous extracts of <i>Epipremnum aureum</i> and their anti-oxidant potential
Academic Responsibilities	Classroom presentation - google meet, Zoom, Microsoft office Laboratory Development and Learning of Resource Materials Student Assessment and Evaluation including Examination work of Institution Research development activities and Research guidance Applying research projects for government funding in areas of Research and Development work
Research Responsibilities	Maintaining documentation and records as required for lab analysis Laboratory Maintenance Analytical Skills Publishing and Patenting the work