

FACULTY PROFILE



Name of the Staff : **Dr. B. ANNARAJ**
Official Address with E-mail Id : Assistant Professor (Senior Grade)
Science and Humanities
National Engineering College
K.R.Nagar, Kovilpatti

Mobile Number : 9786047315/7338625232

DOJ : 03.09.2018

1. Personal Details:

Age : 38
Date of Birth : 07.05.1987
Sex & Marital Status : Male & Married
Citizenship : Indian
Qualification : **M.Sc., M.Phil., Ph.D**

Degree	Programme and Specialization	Class/ CGPA	Month and Year of passing	Institute/ University
Ph.D	Bioinorganic chemistry	--	2015	Anna University, Chennai
M.Phil	Catalysis	First	2010	Madurai Kamaraj University
M.Sc.,	Chemistry	First	2009	Madurai Kamaraj University
B.Sc.,	Chemistry	First	2007	Madurai Kamaraj University

Professional Experience:

Designation	Institution/Organisation	Period	Nature of Duties
Research Associate	Department of Inorganic and physical chemistry, Indian Institute of Science, Bangalore	Mar-2018-Aug-2018	Research and Development
Post-Doc (N-PDF)	Department of Inorganic and physical chemistry, Indian Institute of Science, Bangalore	Feb-2016-2018	Research and Development

Courses taught:

Course Title	UG or PG
Engineering Chemistry-I, Environmental science & Engineering, Biology for Engineers, Biology and Biomaterials, Chemistry for Mechanical Engineering and Polymer Science & Technology, Disaster Management, Sensor for Engineering Application	UG

2. Honors / Awards: *National postdoctoral fellowship by SERB, NewDelhi,*
NPTEL – Discipline Star (Chemistry & Biochemistry)- JAN-APR-2025

3. Academic Achievements

3.1 Short term Courses / Seminars / Conference/ Workshops Organized:

S.No	Title	Period	No of Participants	Venue
1	Webinar on “How to Prepare for GRE ToEFL” By Mr. Punarbasu Roy, Doctoral Student, University of Minnesota, USA	03.06.2020	150	NEC
2	Webinar on Modulation of relative oxygen and nitrogenspecies (ROS/RNS) by enzymes by Dr. Sourav Ghosh, IPC, IISc, Bangaluru	13.07.2020	160	NEC
3	Webinar on Fusion Energy – Need, Current challenges and Opportunities by Dr. Rupak Mukherjee, Princeton Plasma research lab, Princeton, USA	15.09.2020	130	NEC
4	Webinar on “Important Drug Discoveries and their Mechanism of Action by Dr.Venkatesh, AP/Chemistry, IIT,Roorkee	23.1.2021	150	NEC

3.2 Short term Courses / Seminars / Conference/ Workshops Attended:

S.No	Title	Period	No of Participants	Venue
1	Indo-UK Virtual Conference on “Current Innovations and the Future of Therapeutic Developments (CIFTD-2020)”	01-06-2020 – 03-06-2020	320	VIT, Vellore
2	Faculty development programme on Managing Online Classes and Co-creating MOOCs	20.04.2020 – 06-05-2020	250	Teaching Learning centre, Ramanujan College, Delhi University.
3	National level online faculty development program on “innovation to academicians	11-05-2020 – 16-05-2020	170	Ramachandra college of engineering, Eluru, AP
4	Application of spectroscopic methods in molecular structure determination	Sep- Nov. 2020	60	NPTEL

5	Assessments and Tools	27-01-2021 – 28-01-2021	160	SRM, Chennai
6	Recent Trends in chemistry	04-01-2021 – 07-01-2021	220	Department of Chemistry, Bharathiar University, Coimbatore
7	Online faculty development program on "Advances in chemical research"	21-06-2021 – 25-06-2021	320	Dr.NGP Institute of Technology, Coimbatore-48
8	ChemSci: Leaders in the fields Symposium	09-11 th December 2024	450	IISER, Trivandrum

3.3 Expert Lecture Delivered:

S.No	Title	Venue	Date	Participants
1	Biological oxygen transport	Seminar Hall, Department of Civil Engineering, NEC	15.02.2019	60

3.5 Research Achievements:

3.5.1 Publications:

Journal publications: 14

International Journal Publications

S.No	Title of the Paper	Name of the Journal	Vol.No & Page No.	Month & Year
1	Synthesis, structure information, DNA/BSA binding affinity and in vitro cytotoxic studies of mixed ligand copper(II) complexes containing a phenylalanine derivative and diimine co-ligands	Journal of photochemistry and photobiology: Biology	vol. 160, pp. 278-291.	2016
2	Synthesis and crystal structure of imidazole containing amide as a turn on fluorescent probe for nickel ion in aqueous media. An experimental and theoretical investigation	Journal of Molecular Structure	vol. 1104, pp. 1-6	2016
3	Synthesis, crystal structure and biological exploration of water soluble Cu(II) of vitamin B6 derivative	European Journal of medicinal chemistry	vol. 102, pp. 1-8	2015
4	Water-soluble pyridine-based colorimetric chemosensor for naked eye detection of silver ions: design, synthesis, spectral and theoretical investigation	Analytical Methods	vol. 6, no. 24, pp. 9610-9615	2014
5	DFT study on the ground state and excited state intramolecular proton transfer of propargyl arm containing Schiff bases in solution and gas phases	Computational and theoretical chemistry	vol. 1028, pp. 19-26	2014
6	ESIPT inspired dual fluorescent probe (Z)-3-((4-(4-aminobenzyl) phenyl) amino)-1,3-diphenylprop-2-en-1-one: Experimental and DFT based approach to photophysical	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	vol. 133, pp. 44-53	2014

	properties			
7	A systematic investigation on biological activities of a novel double zwitterionic Schiff base Cu(II) complex',	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	vol. 118, pp. 120–129	2014
8	'DNA binding, nuclease, and colon cancer cell inhibitory activity of a Cu(II) complex of a thiazolidine-4-carboxylic acid derivative',	Journal of Coordination Chemistry	vol. 66, pp. 1805-1820.	2013
9	Inba, PJK, Annaraj, B, Thalamuthu, S, & Neelakantan, MA, 'Cu(II), Ni(II), and Zn(II) Complexes of Salan-type ligand containing ester groups: synthesis, characterization, electrochemical properties, and in vitro biological activities	Bioinorganic chemistry and application	Article ID 439848	2013
10	Salen, reduced salen and N-alkylated salen type compounds: spectral characterization, theoretical investigation and biological studies	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	vol. 104, pp. 300–309	2013
11	Synthesis, characterization and crystal structures of copper (II) and nickel(II) complexes of propargyl arm containing N2O2 ligands: antimicrobial activity and DNA binding	Polyhedron	vol. 54, pp.74–83	2013
12	Synthesis and crystal structure of hydroxyacetophenone Schiff bases containing propargyl moiety: Solvent effects on UV–visible spectra	Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy	vol. 91, pp. 329– 337	2012
13	Kinetic insights into ethynyl radical with isobutane and neopentane	Theoretical Chemistry Accounts	Vol.140. pp, 134-139	2021
14	Small molecule selenium-based glutathione peroxidase 4 mimetic inhibits lipid peroxidation and protects cultured neurons from ferroptosis	Free Radical Biology and Medicine	vol. 238, pp. 275-292	2025

Sponsored Projects:

Sponsored Agency	Title of the Project	Period	Main or co-investigator
SERB	Metal mediated Peptide aggregation in neurodegenerative diseases	Feb 2016-2018	Principal Investigator
NewGEN	Degradation Machine fabrication	Mar 2020-2021	Co- Investigator
TNSCST	Thiazole based Chemosensor for the nano molar detection of formaldehyde in food samples	Jun 2024-Apr-2025	Principal Investigator

3.5.3 Research Guidance: **Ph.D Supervisorship recognized by Anna University, Chennai**

3.5.4. Patents Granted/Published

Patents Granted No: 431040

Title : AN APPARATUS FOR SYNTHESISING ACTIVATED CARBON

Year : 2023

3.8 Additional Responsibilities held:

- Science club, Coordinator (2019 – Till date)
- Time table committee (2021- Till date)

NPTEL Course completed:

NPTEL – Discipline Star (Chemistry & Biochemistry)- JAN-APR-2025

1. Bio-inorganic chemistry (96% + 5%Topper+ Gold)
 2. Medicinal Chemistry (77% + 5%Topper+ Silver))
 3. Application of spectroscopic methods in Molecular Structure Determination (60 %)
 4. Biological Inorganic chemistry (73%)
 5. Analytical Chemistry (80% - Silver)
 6. Innovation through Design Thinking (81% - Silver)
 7. Industrial Inorganic chemistry (72%)
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