DR. SRIDEVI NADIMPALLI

Personal

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Professional Experience

2020 – *to date*	*Mentor / Consultant*	CASTLE Advanced Technologies and Systems, Nashik 422001
2014 – *to date*	*Director*	CATS Global, Mithilapuri Layout, Visakhapatnam 530041, India
2008 - 2010	*Associate Professor*	Chemistry Division School of Advanced Sciences, VIT University, Vellore, Tamil Nādu, 632014 India
2005 - 2008	*Principal Investigator* DST WOS A Project	Dept of Applied Chemistry, Cochin University of Science and Technology, Cochin -22 India
2000 - 2002	*Principal Investigator* DRDO Project	Dept of Applied Chemistry, Cochin University of Science and Technology, Cochin -22 India
2000 - 2005	*Lecturer*	Dept. of Applied Chemistry, Cochin University of Science and Technology, Cochin -682022 India

Education / Research

2005-2008	*DST Women Scientist*	Dept of Applied Chemistry, Cochin University of Science and Technology, Cochin-22
1994-1998	*Research Associate, CSIR*	Dept of Applied Chemistry, Cochin University of Science and Technology, Cochin-22
1986-1992	*Ph D Chemistry* (*Best Thesis Award*)	Andhra University, Visakhapatnam, India
1983-1985	*M Sc (Inorganic Chemistry)* *Distinction & 1st Rank*	Andhra University, Visakhapatnam, India
1980-1983	*B Sc (Chemistry)* (*First Class*)	St. Joseph's College Visakhapatnam, India.

Scholarships

- *UGC NET qualified*, 1985
- *CSIR NET qualified*, 1985
- *Junior Research Fellow CSIR*, 1986-1988
- *Senior Research Fellow CSIR*, 1988-1991
- *Research Associate CSIR*, 1994-1996
- *DST WOSA Scholar*, 2005 - 2008

Prizes /Awards

1. First Class Distinction and First Rank in M.Sc. with Inorganic Chemistry, Andhra University.
2. Upadhyayula Satyanarayana Memorial Prize.
3. B.H.S.V.Raghavarao Memorial Prize.
4. L. Ramachandra Rao 70th Birth Anniversary Best Thesis Award from Andhra University.

Ph.D. Thesis

Some kinetic and mechanistic studies on the oxidation of Selenium (IV).

Research Experience

- *30+ years of R&D experience*
- *Guided 5 M. Phil and 5 Ph.D. students at CUSAT, Cochin University of Science &Technology*
- *27 Peer Reviewed Research Publications (23 Journals, 4Conference Proceedings).*

Research Areas

- *Kinetics and Catalysis by simple and supported metal complexes*
- *Mechanistic studies on Oxidations by higher oxidation state metal complexes*
- *Catalysis in solution by Nanomaterials*
- *In Vitro Drug –metal ion interactions*
- *Trace metal analysis and corrosion studies in static seawater*
- *Pollution monitoring with indigenously made optoelectronic systems*
- *Rapid analysis of bacteria in air samples*
- *Developing novel devices for Breath analysis and diagnostics*

Research Projects

2000-2002 "*Trace Metal Analysis of Seawater for detection of Marine Vessels - A Novel Technique.*" Principal Investigator, DRDO (INDIA) Sponsored Project.

2005 –2008 "*Kinetics studies on some drugs and brain chemicals*". Principal Investigator of DST Sponsored Project.

Synopsis of Research Projects

DRDO Sponsored Project

The purpose of this project was to estimate trace metal release into seawater by corroding alloys of a marine vessel. *In the initial phase*, most of the work involved was carried out at laboratory. Trace metal release from corroding alloys was measured and correlated to the rate of corrosion. Seven different alloys were chosen for this purpose and were allowed to corrode in measured volumes of seawater for a measured time. The alloys were then removed, and their corrosion rate was estimated by conventional weight loss method. The seawater was analyzed for the trace metal release by AAS and ICP-MS. The trace metal release was then correlated with the rate of corrosion and composition of the alloy. Effect of various parameters like the volume and location of collection of seawater, surface area of the alloy etc. were also studied. These results indicated that except in the case of copper containing alloys, the trace metal release is commensurate with the composition of the alloy rather than the electropositive nature of the metal present.

This work was accepted for presentation at 22nd Annual Conference on Corrosion Problems and Industry organized between 8-11 December, 2003 at National Research Centre, Physical Chemistry Department, Dokki, Cairo, Egypt.

In the second phase of the project trace metal release from a real marine vessel in a real ocean environment was estimated offline. Seawater samples were collected from near and away from a ship when the ship was located at different points around India, near as well as away from port areas. The seawater was collected from different depths ranging from 0 to 30 meters. The samples were collected and preserved as required for trace metal analysis and analyzed by ICP-MS for metal ions that may possibly be released into seawater by corrosion of metal components that may exist in the ship. This work showed that iron and copper are released from the ship at depths of 5-10 meters from the surface.

DST Sponsored Project

The aim of the DST WOSA project was to make in vitro kinetic studies on some drugs and brain chemicals under physiological conditions to understand the mechanisms of their reactions with trace metal ions. Several drugs, like antiparkinsonians, antianginal, antihypertensives, and thyroid harmone were chosen for this study. The brain chemicals chosen were dopamine, serotonin, inosine and acetylcholine. The metal salts chosen are those which are commonly used in mineral supplements. Possible interactions between some of the drugs and brain chemicals and metal ions could be established through kinetic studies.

Current Research

Presently working on developing and standardizing novel optoelectronic systems for in-situ monitoring of bacteria in air and of ambient pollution at ppb levels. Also working on designing a novel system for simultaneous analysis of breath for various diseases.

Peer Reviewed Publications

Journals

1. **Sridevi N.,** R.Rambabu and L.S.A.Dikshitulu (1989). Mechanism of oxidation of selenium(IV) by cobalt(III) in perchloric acid - a kinetic study. *Transition Metal Chemistry*, 15, 191-196.
2. Dikshitulu S.A. Lanka, R.Rambabu and **N.Sridevi** (1988). Kinetics and mechanism of oxidation of tellurium(IV) by cobalt(III) in perchloric acid, *Transition Metal Chemistry*, 13, 39-41.
3. **Sridevi N.,** R.Rambabu, P.Vani and L.S.A.Dikshitulu (1990). Oxidation of selenium(IV) by periodate - Kinetics and Mechanism. *Indian J. Chem*., 29A, 63-66.
4. Rambabu, R., P. Vani, **N.Sridevi** and L.S.A.Dikshitulu (1989). Kinetics and Mechanism of oxidation of tellurium(IV) by periodate in perchloric acid medium. *J. Indian Chem. Soc*., 66, 906-908.
5. **Sridevi, N.,** R.Rambabu and L.S.A.Dikshitulu (1990). Kinetics and mechanism of osmium(VIII) catalysed oxidation of selenium(IV) by periodate, *J. Indian Chem. Soc*. 67, 552-555.
6. R.Rambabu, **N.Sridevi** and L.S.A.Dikshitulu (1992). Kinetics and mechanism of ruthenium(III) catalysed oxidation of tellurium(IV) by thallium(III). *Proc. Nat. Acad. Sci. India*, 62(A), II, 137-141.
7. **N.Sridevi**, R.Rambabu and L.S.A.Dikshitulu (1992). Kinetics and mechanism of oxidation of selenium(IV) by ditelluratoargentate(III). J. *Indian Chem.Soc*., 69, 127-128.
8. **Sridevi Nadimpalli**, Rambabu Rallabandi and Dikshitulu S.A. Lanka (1993). Kinetics and Mechanism of oxidation of selenium(IV) by permanganate. *Transition Metal Chemistry*, 18, 510.
9. **N.Sridevi** and K.K.Mohammed Yusuff (1996). Kinetics and mechanism of oxidation of iodide by diperiodatoargentate(III). *Indian J.Chem.* 35A, 894-896.
10. S.Mayadevi, **N.Sridevi** and K.K.Mohammed Yusuff (1997). Catalytic activity studies of some new transition metal complexes in the oxidation of ascorbic acid to dehydroascorbic acid. *Indian J. Chem*., 37A, 413.
12. **N.Sridevi** and K.K.Mohammed Yusuff (2000). Kinetics of reduction of iron(III)-dithiocarbamato complexes by oxalic acid - Influence of added ligand on the rate of the reaction. *Indian J. Chemistry*. 39A, 933.
13. K. Anas, **N.Sridevi** and K.K.Mohammed Yusuff (2000). Kinetic and mechanistic studies on reactions of some bis(dithiocarbamato)copper(II) complexes with periodate. *Indian J. Chemistry*, 39A, 940.
14. **Sridevi Nadimpalli**, Jelaja Padmavathy and Karugapadath K.M. Yusuff (2001) Determination of nature of species of diperiodatocuprate(III) through kinetic and mechanistic studies on the oxidation of iodide. *Transition Met.Chem*. 26(3), 315.
15. N. R. Suja, **N. Sridevi** and K.K. Mohammed Yusuff (2004). A Comparative Study of Catalysis by Zeolite Encapsulatedand and Neat Copper o-Phenylenediamine Complexes towards Oxidation of Catecholand 3,5-di-tert-Butylcatechol Using Hydrogen Peroxide. *Kinetics and Catalysis*, 45(3), 337.
16. N. R. Suja, **N. Sridevi** and K.K. Mohammed Yusuff (2004). Kinetics and mechanism of reduction of ferricytochrome C by vanadate in phosphate buffers. *Indian J. Chem*. 43A(9), 1890.

17. Pearly Sebastian Chittilapilly, **N.Sridevi** and K.K.Mohammed Yusuff (2007). Characterization and catalytic activity of Polymer supported ruthenium Schiff base complexes towards catechol oxidation, *J. Appl. Poly. Sci*., 105(3), 997-1002; Published Online: Apr 9 2007, DOI: 10.1002/app.26143
18. **N. Sridevi** and K.K. Mohammed Yusuff (2007). Rapid In-Vitro Screening of Drug-Metal Ion Interactions *Toxicol. Mech. Meth*., 17(9), 559 – 565.
19. Pearly Sebastian Chittilappilly, **N. Sridevi** and K. K. Mohammed Yusuff (2008) Ruthenium complexes of Schiff base ligands as efficient catalysts for catechol–hydrogen peroxide reaction *Journal of Molecular Catalysis A: Chemical*, 286(1-2), 92-97.
20. **N. Sridevi** and K.K. Mohammed Yusuff (2008). Synthesis, characterization and kinetic studies on complex formed between amantadine hydrochloride and sodium molybdate at physiological *p*H *Indian J. Chem*., 47A, 836-842.
21. V. Arun, **N. Sridevi**, P.P. Robinsona, S. Manjua, K.K.M. Yusuff (2009). Ni(II) and Ru(II) Schiff base complexes as catalysts for the reduction of benzene. *J. Molecular Catal A: Chem*., 304, 191–198.
22. Rao Tatavarti, **N.Sridevi**, D.P. Kothari (2010). On assessing the quality of university research – *RT Factor*, *Current Sc*., 98(8), 1015-1010.
23. Rao Tatavarti, **Sridevi Nadimpalli**, Gowtham Venkata Kumar Mangina, Naga Kiran Machiraju, Arulmozhivarman Pachiyappan, Shridhar Hiremath, Venkataseshan Jagannathan, and Pragasam Viswanathan (2023). Photonic System for Real Time Detection, Discrimination, and Quantification of Microbes in Air, *Front. Phys. Sec. Optics and Photonics*, Volume 11 – 2023, 1-31.

Conference Proceedings

24. **N.Sridevi**, K. Anas and K.K.Mohammed Yusuff (1997). "Kinetic and mechanistic studies of oxidation of some copper(II) dithiocarbamato complexes by periodate". Presented at the *National Workshop on Catalysis*, conducted from 11-12-1997 at RRL, Trivandrum, India.
25. Suja N.R., **Sridevi N.** and Mohammed Yusuff K K (2000). "Reactions of ferricytochrome C - Kinetics and mechanism of oxidation of vanadate by ferricytochrome C in phosphate buffers". Presented at *International Symposium on Advances in Bioinorganic Chemistry*, conducted from November 20-24, 2000 at Tata Institute of Fundamental Research, Mumbai, 400 005, India.
26. **N. Sridevi**, B. Madhav Mallia, & K. K. Mohammed Yusuff (2003). Release of metal ions into seawater from corroding alloys. Accepted for presentation at *22nd Annual Conference on Corrosion Problems and Industry* organized between 8-11 December, 2003 at National Research Centre, Physical Chemistry Department, Dokki, Cairo, Egypt.
27. Rao Tatavarti and **Sridevi N.** (2019). 'Photonic System Real Time Remote Monitoring of Air Quality', *Proc. International Conference on Gas Analysis 2019*, The Hague, Netherlands, June 18 – 20, 2019.