Dr. Vishwanath R. S

Assistant Professor, Centre for Research in Functional Materials (CRFM), JAIN University, Jain Global Campus, Jakkasandra Post, Kanakapura Tq, Ramanagara District, Karnataka, India
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EDUCATION

Ph. D. (Chemical Sciences), Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland
November 1, 2016 – September 30, 2020 (Awarded; October 8, 2020)

- Advisor: Dr. hab. Martin Jönsson-Niedziółka
- Ph. D. thesis: "Novel redox probes for electrochemistry at the three-phase junction."
- Synthesis and characterization of novel and highly lipophilic bis(tridentate) ruthenium(II) complexes having bis(benzimidazolyl) pyridine-based ligands and their electrochemistry at liquid-liquid interfaces
- Electrochemical investigations of biologically essential compounds and redox probes at liquid-liquid interfaces (using three-phase and thin-film electrode configurations)
- Fabrication of microfluidic electrochemical devices of different geometries (using photolithography process in a clean room) and performing hydrodynamic electrochemistry at liquid-liquid interfaces (using three-phase and four-electrode configurations)
- **Ph. D Secondment**: Department of applied chemistry, Chuo University, Tokyo, Japan

Master of Science (Organic Chemistry), Christ University, Bangalore, India
May 15, 2012 – May 24, 2014

- Master project: "Synthesis And Characterisation of Impurities of Candesartan Cilextil" in collaboration with R & D, Apotex Pharmachem India Pvt Ltd (April 2013 – May 2013)
- Performing multi-step reactions and structural elucidation using IR, NMR, Mass, and other spectroscopic means

Bachelor of Science (Chemistry, Zoology, and Microbiology), Bangalore University, India
May 2008 – May 2011

RESEARCH & PROFESSIONAL EXPERIENCE

Assistant Professor, Centre for Research in Functional Materials (CRFM), JAIN University, India
March 6, 2023 – Present

- Director: Prof. Mahaveer Kurkuri
- Research interest: Electrochemical energy conversion and storage (photo/electrochemical water splitting, supercapacitor, and battery studies), electrochemistry at liquid-liquid interfaces (three-phase, thin-film, and four-electrode configurations), and retrieving energy with water treatment (capacitive/battery desalination)
- Writing grant proposals and undertaking CRFM website development by coordinating with the IT department
- Teaching activities and supervising lab projects of doctoral students, manuscript correction, review, and book writing
- Collaborating with academic research groups and industry and coordinating joint grant proposal preparation

Postdoctoral fellow, Department of Chemical Sciences, Ariel University, Israel
April 19, 2021 – February 2, 2023 (1 year, 10 months, 8 days)

- Advisor: Dr. Tomer Zidki
- Synthesis and characterization of metal-organic frameworks, multinary metal compounds (oxides, sulfides, oxysulfides, phosphides, and nitrides), and their composites
- Investigate as-synthesized materials in photo/electrochemical water-splitting, photo/electrochemical supercapacitors, and battery studies
- Train, guide, and supervise Ph.D. students in experiments and manuscript preparation
- Writing grant proposals for PI, handling manuscripts and correspondence during publication

Research Assistant, Institute of Physical Chemistry, Polish Academy of Sciences, Poland
September 8, 2016 – October 31, 2020 (4 years, 1 month, 24 days in 0.25 of work time)

- The employment contract of 0.25 of work time: Part-time employment during Ph. D studies
- Fabrication of microfluidic devices of different geometries for electrochemical applications
- Teaching activities, report writing, and supervising lab projects for master's intern students

Ph.D. Secondment, Department of applied chemistry, Chuo University, Tokyo, Japan
February 14, 2019 – April 11, 2019 (1 month, 29 days)

- Advisor: Prof. Mas-aaki Haga
- Synthesis and characterization of highly lipophilic bis(tridentate) ruthenium(II) complexes having bis(benzimidazolyl) pyridine-based ligands
- Three-phase electrode anion transfer studies using as-synthesized complexes

Research fellow, DST- Government of India funded project, REVA University, India

February 4, 2015 – August 29, 2016 (1 year, 6 months, 26 days)

- Advisor: Dr. Sakthivel Kandaiah
- Fabrication of organic, inorganic, and metalloorganic thin films on different substrates and characterizing them using XRD, XPS, UV-Vis, IR, SEM, and electrochemical analysis
- Investigation of as-prepared thin films for photo/electrochemical hydrogen evolution, methanol electrooxidation, and electrochemical supercapacitors studies

Junior research fellow, CNMS, Jain University, India
June 10, 2014 – February 2, 2015 (7 months, 24 days)

- Advisor: Dr. Siddapa Patil
- Project title: "Bio-Organometallic Chemistry of New N-Heterocyclic Carbene-Metal Complexes."
- Synthesis of oxazole-substituted imidazolium, benzimidazolium salts, and respective N-heterocyclic carbene-silver (I) acetate complexes

SCHOLARSHIP/AWARDS:

- International Postdoctoral Fellowship, Ariel University, Israel (2021-2023)
- Ph.D. scholarship by National Science Centre, Government of Poland under grant no NCN 2015/18/E/ST4/00319
- First poster award in 9th international workshop on surface modification for chemical and biochemical Sensing- November 2019, Poland
- Doctoral Scholarship by Institute of Physical Chemistry of the Polish Academy of Sciences, Poland (2019-2020)
- Scholarship for outstanding Ph.D. students by the Institute of Physical Chemistry of the Polish Academy of Sciences, Poland (2019-2020)
- Junior research fellowship, SERB-DST (No. CS198) in 2015 (Government of India)

PUBLICATIONS:

- As the corresponding and first author: **4**
- As the first author: **5**
- As co-author: **7**
- Total: **16**

1) **R. S. Vishwanath** and Sakthivel Kandaiah, "Facile electrochemical growth of nanostructured copper phthalocyanine thin film via simultaneous anodic oxidation of copper and dilithium phthalocyanine for photoelectrochemical hydrogen evolution" ***J Solid State Electrochem (2016) 20:767-773.***

2) **Vishwanath R. S** and Sakthivel Kandaiah, "Chemically immobilised Triazine based $Cu^{II}S_3C_3N_3$ metallopolymer on copper as a photocathode for photoelectrochemical hydrogen evolution" ***J. Electrochem. Soc., 163 (6) H402-H409 (2016).***

3) **Vishwanath R. S** and Sakthivel Kandaiah, "Electrochemical growth of triazine based metal ion containing polymers on nanostructured nickel electrodeposits and their hydrogen evolution activities in acidic condition" ***Int. J. Hydrogen Energy. 41 (2016) 8829-8838.***

4) **R. S. Vishwanath** and Sakthivel Kandaiah, "Electrochemical preparation of crystalline γ-CuI thin-films through potential controlled anodisation of copper and its photoelectrochemical investigations" ***J Solid State Electrochem. 20 (2016), Issue 7, 2093-2102.***

5) **Vishwanath R. S** and Sakthivel Kandaiah**,** "Metal ion-containing $C_3N_3S_3$ coordination polymers chemisorbed to a copper surface as acid stable hydrogen evolution electrocatalysts", ***Journal of Materials Chemistry A, 2017,5, 2052-2065.***

6) Iranna Udachyan, **R.S. Vishwanath**, C.S. Pradeepa Kumara, Sakthivel Kandaiah, "Ruthenium ion containing N and S rich triazine based metallopolymer as a low overpotential acid stable electrocatalyst for hydrogen evolution" ***Journal of Catalysis 357 (2018) 138–146***.

7) Iranna Udachyan, Pradeepa kumara C.S, **Vishwanath R. S**, and Sakthivel Kandaiah, "Visible-Light Active Mixed-valent Copper ions Coordinated 2,5-dimercapto-1,3,4-Thiadiazole based p-type Metallopolymer" ***ChemElectroChem 2018, 5, 1–8***.

8) M. Mallappa, M.A. Savanur, B.G. Gowda, **R.S. Vishwanth**, B. Puthusseri, "Molecular Interaction of Hemorrheologic Agent, Pentoxifylline with Bovine Serum Albumin: An Approach to Investigate the Drug Protein Interaction Using multispectroscopic, Voltammetry and Molecular Modelling Techniques" ***Zeitschrift für Physikalische Chemie, 2018, Volume 233, Issue 7, Pages 973–994***.

9) Iranna Udachyan, **R.S. Vishwanath**, C.S. Pradeepa Kumara, Sakthivel Kandaiah, "Potential dependent growth of $Cu(OH)_2$ nanostructures on Cu and their thermal conversion to mixed-valent copper oxides p-type photoelectrode" ***Int. J. Hydrogen Energy, Volume 44, 2019, 7181-7193***.

10) Iranna Udachyan, **R.S. Vishwanath**, C.S. Pradeepa Kumara, Sakthivel Kandaiah, "Anodic fabrication of nanostructured Cu_xS and $CuNiS_x$ thin films and their hydrogen evolution activities in acidic electrolytes" ***New Journal of Chemistry, 2019, 43 (20), 7674-7682***.

11) **Vishwanath R. S**, Emilia Witkowska-Nery, and Martin Jönsson-Niedziółka, "Electrochemistry of selected quinones at immiscible n-octyl-2-pyrrolidone/aqueous interface using a three-phase electrode system" ***Electrochimica Acta 306, 54-60, 2019***.

12) **Vishwanath R. S**, Emilia Witkowska-Nery, and Martin Jönsson-Niedziółka, "Electrochemical reduction of 7,7,8,8-tetracyanoquinodimethane at the n-octyl pyrrolidone/water/electrode three-phase junction" ***Journal of Electroanalytical Chemistry 854 (2019) 113558***.

13) **R. S. Vishwanath**, Masa-aki Haga, Takumi Watanabe, E. Witkowska Nery, M. Jönsson-Niedziółka, "Three-phase electrochemistry of a highly lipophilic neutral Ru-complex having tridentate bis(benzimidazolate)pyridine ligand" ***Electrochimica Acta, 2020, 362, 137090, 2020.***

14) Poulami. M, K. Sathiyan, **Vishwanath R. S**, and T. Zidki, "Anchoring MoS_2 on Ethanol-Etched Prussian Blue Analog for Enhanced Electrocatalytic Efficiency for Oxygen Evolution Reaction" ***Materials Chemistry Frontiers, 2022, 6, 1770-1778.***

15) Poulami Mukherjee, **Vishwanath R. S**, Arie Borenstein, and Tomer Zidki, "Compositing redox-rich Co-Co@Ni-Fe PBA nanocubes into cauliflower-like conducting polypyrrole as electrode material in supercapacitors" ***Materials Chemistry Frontiers, 2023,7, 1110-1119.***

16) Prashanth Vishwa, Charles Babbet, JN Bhargav, Debabrat Kotoky, Sarada k Gopinathan, Iranna Udachyan, **Vishwanath R. S**, Sakthivel Kandaiah, "Visible light-active binary metal ion containing functional triazine metallopolymers as a stable p-type photo-electrocatalyst in protic electrolytes" ***New J. Chem., 2023,47, 10105-10115.***

17) Prashanth Vishwa, Charles Babbet, Debabrat Kotoky, Sarada k Gopinathan, Iranna Udachyan, **Vishwanath R. S**, Sakthivel Kandaiah, "Atomistic Distribution of Iron and Copper in Coordination Metallopolymer for Highly Efficient and Stable Hydrogen Evolution in Protic Media" ***ChemCatChem, 2023, e202300629.***

REFERENCE

1. **Dr. hab. Martin Jönsson-Niedziółka**, Institute of Physical Chemistry, Polish Academy of Sciences, Poland. E-mail: martinj@ichf.edu.pl
2. **Dr. Emilia Witkowska Nery**, Institute of Physical Chemistry, Polish Academy of Sciences, Poland. E-mail: ewitkowskanery@ichf.edu.pl
3. **Prof. Mas-aaki Haga**, Chuo University, Tokyo, Japan. E-mail: mhaga83@gmail.com
4. **Dr. Sakthivel Kandaiah**, School of Chemical Sciences, REVA University, India. E-mail: Sakthivel.k@reva.edu.in
5. **Dr. Ranjith Krishna Pai**, Scientist, Technology Mission Division, Department of Science & Technology, Government of India. E-mail: ranjith.krishnapai@gmail.com
6. **Dr. Tomer Zidki**, Department of Chemical Sciences, Ariel University, Israel. E-mail: tomerzi@ariel.ac.il
7. **Prof Mahaveer Kurkuri**, Associate Director, Centre for Research in Functional Materials (CRFM), JAIN University, India. E-mail: mahaveer.kurkuri@jainuniversity.ac.in