

Name of the Teaching Staff	<b>Dr. J. PRABHU</b>			
Designation	<b>Assistant Professor (AGP 7000)</b>			
School / Division	<b>SSAM / PHYSICAL SCIENCES</b>			
Date of Joining the Institution	<b>10/06/2010</b>			
Qualification with Class / Grade	UG	PG	Ph.D.	
	I	I	Distinction	
Area of Specialization	Supra molecular Chemistry, Organic Sensors and Nano Sensors			
Research Interests	Ballistics / Molecular design and synthesis / Fluorescent Chemo Sensors			
Subjects Teaching	Under Graduate		Post Graduate	
	Forensic Science laboratory Applied Chemistry Environmental Studies Engineering Chemistry Chemistry for Engineers		Instrumental methods of Chemical Analysis Atomic Structure Thermodynamics Analytical Chemistry Heterocyclic Chemistry Physical Chemistry for Masters	
Total Experience in Years	Teaching	Industry	Research	
	19	Nil	14	
Papers Published	National	07	International	30
Papers Presented in Conference	National	29	International	12
Conferences / Symposiums / Seminars / Workshops Participated	National	02	International	01
FDP / STTP / MDP / Summer / Winter School attended	<ul style="list-style-type: none"> <li>FDP on Question Paper setting and Evaluation</li> <li>FDP on Project Proposal Writing</li> </ul>			
M.Phil. / Ph.D. Guide ship	Field		University	
	Chemosensors		01	
Ph.D. Projects Guided	Ph.D.s	01 (Undergoing)	Project at Master's Level	08
Professional Memberships	<ul style="list-style-type: none"> <li>IAENG</li> <li>GLASS BLOWERS ASSOCIATION</li> </ul>			
Consultancy Activities	Nil			
Awards & Honours	Best Presentation Award in Sacred Heart College, Tirupattur, India.			
Grants Fetched	Short term grant from Karunya University.			
Interaction with Professional Institutions				
Educational Details	B.Sc. – Government Arts College, Coimbatore			
	M.Sc. – Sri Ramakrishna Mission Vidyalaya Arts and Science College.			

	Ph.D. - Karunya Institute of Technology and Sciences, Coimbatore
Experience	19 years
Contact Details	Room No : 209 Building SSAM Mobile : 9655223458 Intercom : 4002 E-mail : <a href="mailto:viktorprabhu@gmail.com">viktorprabhu@gmail.com</a> <a href="https://orcid.org/0000-0002-7645-547X">https://orcid.org/0000-0002-7645-547X</a>

### **Papers Published**

#### **Journals with Scopus**

#### **2014**

- 1 **Jeyaraj Prabhu.**; Krishnaswamy, Velmurugan.; Raju Nandhakumar\*. A highly selective and sensitive naphthalene-based chemodosimeter for Hg<sup>2+</sup> ions. *J. Lumin.*, **2014**, *145*, 733-736.

#### **2015**

- 2 **J. Prabhu.**; K, Velmurugan.; R, Nandhakumar.\* Pb<sup>2+</sup> ion induced self-assembly of anthracene based chalcone with a fluorescence turn on process in aqueous media. *J. Anal. Chem.*, **2015**, *70*, 8, 943–948
- 3 **J. Prabhu.**; K, Velmurugan.; R, Nandhakumar.\* Development of fluorescent Lead II sensor based on anthracene derived chalcone. *Spectrochim. Acta A*, **2015**, *144*, 23-28.

#### **2016**

- 1 S, Santhoshkumar.; K, Velmurugan.; **J, Prabhu.**; G, Radhakrishnan.; R, Nandhakumar,\* A Naphthalene derived Schiff base as a selective Fluorescent probe for Fe<sup>2+</sup>. *Inorg. Chim. Acta.*, **2016**, *439*, 1-7.

#### **2017**

1. **Prabhu, J.**; Velmurugan, K.; Raman, A.; Duraipandy, N.; Kiran, M. S.; Easwaramoorthi, S.; Nandhakumar, R. A Simple Chalcone Based Ratiometric Chemosensor for Sensitive And Selective Detection of Nickel Ion and its Imaging in live cells, *Sens. Actuators, B*, **2017**, 238,306-317.
2. **Prabhu, J.**; Velmurugan, K.; Nandhakumar, R. Symmetric fluorescent probes for the selective recognition of Ag<sup>+</sup>-ion *via* restricted C=N isomerization and on-site visual sensing

applications, *J. Photochem. Photobiol. A*, **2017**, *337*, 6–18. (INVITED FEATURE ARTICLE)

3. Derin, Don.; K, Velmurugan.; **J,Prabhu.**; N, Bhuvanesh.; A, Thamilselvan.; R, Nandhakumar.\* A dual analyte fluorescent chemosensor based on a furan-pyrene conjugate for Al<sup>3+</sup> & HSO<sub>3</sub><sup>-</sup>. *Spectrochim. Acta A*, 2017, 174, 62-69.

## 2018

1. Krishnaswamy, Velmurugan.; **Jeyaraj, Prabhu.**; Arunachalam, Raman.; Natarajan, Duraipandy.; Manikantan, Syamala Kiran.; Shanmugam, Easwaramoorthi.; Lijun, Tang.; Raju Nandhakumar\*. Dual Functional Fluorescent Chemosensor for discriminative detection of Ni<sup>2+</sup> and Al<sup>3+</sup> -ions and its imaging in living cells. *ACS Sustainable Chem. Eng.*, 2018, 6 (12), pp 16532 16543. DOI: 10.1021/acssuschemeng.8b03625
2. N, Bhuvanesh.; S, Suresh.; **J, Prabhu.**; K, Kannan.; V, Rajesh Kannan.; R, Nandhakumar\* Ratiometric fluorescent Chemosensor for Silver Ion and its bacterial cell imaging. *Opt. Mater.*, **2018**, 82, 123-129.
3. S, Suresh.; N, Bhuvanesh.; **J, Prabhu.**; A, Thamilselvan.; S, Rex Jeya Rajkumar.; K, Kannan.; V, Rajesh Kannan, and R. Nandhakumar\* Pyrene based chalcone as a reversible fluorescent chemosensor for Al<sup>3+</sup> ion and its biological applications, *J Photochem Photobiol A Chem.*, **2018**, 359, 172-182.

## 2019

1. **J, Prabhu.**; K, Velmurugan.; A, Raman.; N, Duraipandy.; M.S, Kiran.; S, Easwaramoorthi.; Lijun, Tang.; R, Nandhakumar\*. Pyrene-phenylglycinol linked reversible ratiometric fluorescent chemosensor for the detection of aluminium in nanomolar range and its bio-imaging. *Anal. Chim. Acta.*, 1090, 114-124, 2019. doi.org/10.1016/j.aca.2019.09.008

## 2020

1. N. Bhuvanesh, P. Uttam Kumar, L. Pushparaj, S. Suresh, T. Daniel Thangadurai, **J. Prabhu\*** and R. Nandhakumar\* Benzene linked dipodal naphthalene: chemosensor with colorimetric enhancement and fluorimetric quenching for Fe<sup>3+</sup> ion and its application in live cell imaging. *J. Anal. Chem*, **2020**, 75, 12, 1554-1564. DOI: 10.1134/S1061934820120047.
2. S, Suresh.; N, Bhuvanesh.; **J, Prabhu\***.; R, Nandhakumar\* A study of fluorescent chemosensor for Cu (II) based on an imidazole derivative and its bioimaging. *J. Anal. Chem*, **2020**, 75, 12, 1565-1574. DOI: 10.1134/S1061934820120126.
3. K. Velmurugan, R. Vickram, R. Karthick, C. V. Jipsa, S. Suresh, G. Prabakaran, **J. Prabhu**, G. Velraj, R. Nandhakumar\* Binol diaryl dipyrene fluorescent probe: dual detection of

silver and carbonate ions and its bioimaging applications. **J Photochem Photobiol A Chem.**, **2020**, 401, 112737. <https://doi.org/10.1016/j.jphotochem.2020.112737>.

4. Uppalapati Pramod Kumar.; Tongxiang, Liang.;\* C, Joseph Kennady.; Raju, Nandhakumar\*.; **Jayaraj, Prabhu**. Influence of Positional Isomeric Spacers of Naphthalene Derivatives on Ni–W Alloy Electrodeposition: Electrochemical and Microstructural Properties. **ACS Omega**, **5**, **7**, **3376-3388**, **2020**, DOI: 10.1021/acsomega.9b03599.
5. C. Immanuel David, N. Bhuvanesh, Haritha Jayaraj, A. Thamilselvan D. Parimala devi, A. Abiram **J. Prabhu** \*, and R. Nandhakumar\* Experimental and theoretical studies on simple S-S bridged dimeric Schiff base: selective chromo-fluorogenic chemosensor for nanomolar detection of Fe<sup>2+</sup> & Al<sup>3+</sup> ions and its varied applications. **ACS Omega**, **5**, **6**, **3055-3072**, **2020**. DOI: 10.1021/acsomega.9b04294

## 2021

1. K, Velmurugan.; R, Vickram.; CV, Jipsa.; R, Karthick.; G, Prabakaran.; S, Suresh.; J, Prabhu.; G, Velraj.; L, Tang.; R, Nandhakumar\*. Quinoline based reversible fluorescent probe for Pb<sup>2+</sup>: applications in milk, bioimaging and INHIBIT molecular logic gate. **Food Chem.**, **2021**, in press.
2. G, Prabakaran.; K, Velmurugan.; R, Vickram.; C, Immanuel David.; A, Thamilselvan.; J, Prabhu.; R, Nandhakumar\*. Triphenyl-imidazole based reversible coloro/fluorimetric sensing and electrochemical removal of Cu<sup>2+</sup> ions using capacitive deionization and molecular logic gates. **Spectrochim. Acta A**, **2021**, 246,119018.  
<https://doi.org/10.1016/j.saa.2020.119018>
3. Quinoline based reversible fluorescent probe for Pb<sup>2+</sup>; applications in milk, bioimaging and INHIBIT molecular logic gate. K Velmurugan, R Vickram, CV Jipsa, R Karthick, G Prabakaran, S Suresh, Food Chemistry 348, 129098, **2021**
4. Functionalized graphene oxide materials for the fluorometric sensing of various analytes: a mini review. S Suguna, CI David, J Prabhu, R Nandhakumar Materials Advances 2 (19), 6197-6212, **2021**
5. Triphenyl-imidazole based reversible coloro/fluorimetric sensing and electrochemical removal of Cu<sup>2+</sup> ions using capacitive deionization and molecular logic gates. G Prabakaran, K Velmurugan, R Vickram, CI David, A Thamilselvan, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 246, 119018, **2021**

## 2022

1. A lead selective dimeric quinoline based fluorescent chemosensor and its applications in milk and honey samples, smartphone and bio-imaging. G Prabakaran, R Vickram, K Velmurugan, CI David, SPM Paul, RS Kumar. Food Chemistry 395, 133617, **2022**.
2. Positional isomeric symmetric dipodal receptors dangled with rotatable binding scaffolds: fluorescent sensing of silver ions and sequential detection of l-histidine and

Their Multifarious Applications ...P Gunasekaran, C Immanuel David, S Shanmugam, K Ramanagul. *Journal of Agricultural and Food Chemistry* 71 (1), 802-814, **2022**

3. Highly selective, reversible and ICT-based fluorescent chemosensor for bismuth ions: Applications in bacterial imaging, logic gate and food sample analysis CI David, PT Movuleeshwaran, H Jayaraj, G Prabakaran, MS Kumar, .*Journal of Photochemistry and Photobiology A: Chemistry* 422, 113558. **2022**
5. Pyrrole Carboxamide Binol Conjugates: Chiral Receptors for Chemical Inversion of L-amino Acids to D-amino Acids K Velmurugan, L Tang, J Prabhu, R Nandhakumar. *BP International*, **2022**.
6. Quinoline-Benzimidazole Conjugate Based Fluorescent Chemosensor: A Ratiometric Sensor for the Differentiation of Rutile and Anatase TiO<sub>2</sub> Nanoparticles. K Velmurugan, S Suguna, I Sheebha, CI David, B Vidhya, J Prabhu, *New Innovations in Chemistry and Biochemistry*, 13, **2022**
7. A Chalcone Based Fluorescent Organic Material (FOM): Efficient Sensing of Lead Ions in Semi-Aqueous Medium. S Suresh, K Velmurugan, J Prabhu, R Nandhakumar *BP International*, **2022**

## **2023**

1. Bis naphthalene derived dual functional chemosensor: specific signalling for Al<sup>3+</sup> and Fe<sup>3+</sup> ions with on-the-spot detection, bio-imaging, and logic gate applications. G Prabakaran, CI David, SPM Paul, R Ramya, A Abiram, VR Kannan. *Journal of Photochemistry and Photobiology A: Chemistry* 437, 114490, **2023**
2. Anthracene benzene conjugate (ABC): An asymmetric Schiff base for the selective detection of Ag<sup>+</sup> ion using fluorimetry and its applications. S Suguna, R Nandhakumar, J Prabhu. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy* 288, 122196, **2023**
3. Symmetric and disulfide linked reversible fluorescent organic material: A chemosensor for Pb<sup>2+</sup> ion and its applications in real world sample analysis. S Suguna, A Abiram, RS Kumar, AI Almansour, K Perumal, J Prabhu. *Journal of Photochemistry and Photobiology A: Chemistry* 442, 114777, **2023**
4. Experimental and theoretical studies on naphthalene based fluorophores: Applications in detection of Al<sup>3+</sup> ions in water, soil, food and live cells. S Suguna, A Abiram, R Nandhakumar, J Prabhu. *Journal of Photochemistry and Photobiology A: Chemistry* 435, 114268, **2023**.
5. A simple symmetric N<sup>1</sup>, N<sup>2</sup>-bis 3-nitrobenzylidene fluorescent probe for Fe<sup>3+</sup> ion: experimental and theoretical investigations. S Suguna, E Antony, D Parimaladevi, A Abiram, RS Kumar, AI Almansour. *Journal of the Iranian Chemical Society* 20 (4), 849-859, **2023**

## **2024**

1. Quinoline scaffolds as fluorescent symmetric dipodal molecular cleft for swift and efficient Ag<sup>+</sup> ion detection: Applications in real samples and bioimaging. S Suguna, K Velmurugan, D Parimaladevi, A Abiram, PM Sukitha. Journal of Photochemistry and Photobiology A: Chemistry 447, 115226, **2024**.
2. Salicylaldehyde built fluorescent probe for dual sensing of Al<sup>3+</sup>, Zn<sup>2+</sup> ions: Applications in latent fingerprint, bio-imaging & real sample analysis. G Narmatha, G Prabakaran, S Seenithurai, JD Chai, J Prabhu. Food Chemistry 441, 138362-138362, **2024**

### **Papers Presented in Conference**

#### **List of Conferences / Workshops / Symposium attended and presented.**

#### **2020**

1. G. Prabakaran.; **J. Prabhu.**; R. Nandhakumar\*. Highly chemoselective colorimetric/fluorometric dual-channel sensor for the selective and sensitive detection of Cu<sup>2+</sup>. Two days national conference on Recent trends in medicinal, materials, environmental & battery research in chemistry., Department of Chemistry, Karpagam academy of higher education, Coimbatore, Tamil Nadu, India, March 12-13, 2020. ORAL (BEST PRESENTATION AWARD - II prize)
2. G. Prabakaran.; **J. Prabhu.**; R. Nandhakumar\*. Schiff base derived useful scaffold exhibiting Cu ion sensing by Fluoro/colorimetry. First International Conference on Frontiers in Chemical Sciences (ICFCS-2020)., Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India, March 4-5, 2020. POSTER
3. S. Suguna.; **J. Prabhu.**; R. Nandhakumar\*. GO-PPD nanohybrids as fluorescent chemosensors for metal ion detection. First International Conference on Frontiers in Chemical Sciences (ICFCS-2020)., Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India, March 4-5, 2020. POSTER
4. Anila Puthoor.; Abdul Basith M Mansoor.; G. Prabakaran.; **J. Prabhu\***.; R. Nandhakumar\*. Naphthalene fluorophores for the specific recognition of Aluminium ions. First International Conference on Frontiers in Chemical Sciences (ICFCS-2020)., Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India, March 4-5, 2020. POSTER
5. Abdul Basith M Mansoor.; Anila Puthoor.; G. Prabakaran.; **J. Prabhu\***.; R. Nandhakumar\*. Copper induced fluorescence quenching of Schiff base fluorophores. First International Conference on Frontiers in Chemical Sciences (ICFCS-2020)., Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Coimbatore, Tamil Nadu, India, March 4-5, 2020. POSTER
6. . R. Nandhakumar\*.; K. Velmurugan.; R. Vickram.; R. Karthick.; C. V. Jipsa.; S. Suresh.; G. Prabakaran.; **J. Prabhu.**; G. Velraj. Strategically modified Binol-pyrene conjugate as reverse PET assisted reversible fluorescent probe for dual detection of silver and carbonate ion and its

bioimaging applications. One day national conference on Recent trends in Chemistry-2020 (RTC-2020)., Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India, February 7, 2020. POSTER

7. **J. Prabhu\***; Anila Puthoor.; Abdul Basith M Mansoor.; G. Prabakaran.; R.

Nandhakumar\*. Imidazole base fluorescent chemosensor for the detection of Cu<sup>2+</sup> ion. One day national conference on Recent trends in Chemistry-2020 (RTC-2020)., Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India, February 7, 2020. POSTER

8.G. Prabakaran.; **J. Prabhu\***; R. Nandhakumar\*. Naphthaldehyde derived Schiff base as fluorescent chemosensor for the detection of Cu<sup>2+</sup> ions. One day national conference on Recent trends in Chemistry-2020 (RTC-2020)., Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India, February 7, 2020. POSTER

9. S. Suguna.; K. Bhavya.; **J. Prabhu\***; R. Nandhakumar\*. GO-PPD Nanocomposites: fluorescent chemosensors for metal ions. One day national conference on Recent trends in Chemistry-2020 (RTC-2020)., Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, Tamil Nadu, India, February 7, 2020. POSTER (BEST POSTER PRESENTATION AWARD)

## 2019

1. R. Nandhakumar\*, **J. Prabhu** and K. Velmurugan. Dual Functional Fluorescent Chemosensor for discriminative detection of Ni<sup>2+</sup> and Al<sup>3+</sup> -ions and its imaging in living cells. National Conference on Recent Trends in Chemistry (RTC'19), Post Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore – 641 046, TamilNadu, India, February 1 – 2, 2019. POSTER –PP67

2.**J. Prabhu.**; S. Suresh.; N. Bhuvanesh.; R. Nandhakumar\*. A Simple Bis-Salicylaldehyde based chemosensor for the detection of Ce<sup>3+</sup> ions in Aqueous media. National Conference on Recent Trends in Chemistry (RTC'19), Post Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore – 641 046, TamilNadu, India, February 1 – 2, 2019. POSTER –PP77

3. S. Suresh.; N. Bhuvanesh.; **J. Prabhu.**; R. Nandhakumar\*. New Pyridine based chemosensor for the detection of tryptophan. National Conference on Recent Trends in Chemistry (RTC'19), Post Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore – 641 046, TamilNadu, India, February 1 – 2, 2019. POSTER – PP111

## 2018

1. **J. Prabhu.**; K. Velmurugan.; R. Nandhakumar\*. Ratiometric fluorescent detection of Nickel ion and its bioimaging studies. National Conference on Recent Trends in Chemistry (RTC'18), Post Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya

College of Arts & Science, Coimbatore – 641 046, TamilNadu, India, February 2, 2018.

POSTER – PP36

- 2.K, Velmurugan.; **J, Prabhu.**; R, Nandhakumar\*. Discriminative fluorimetric detection of Ni<sup>2+</sup> and Al<sup>3+</sup> ions and its bio imaging applications. National Conference on Recent Trends in Chemistry (RTC'18), Post Graduate and Research Department of Chemistry, Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore – 641 046, TamilNadu, India, February 2, 2018. POSTER – PP57
- 3.R, Nandhakumar.\*; K, Velmurugan.; **J, Prabhu.** Axially Chiral Binol based fluorescent chemosensors for detection of metal ions and its bioimaging. 2nd International Conference on Interdisciplinary approach in Science and Technology (ICIAST), Rotunda Gardens, Colombo, Sri Lanka, May 25-28, 2018. OP– 2.
- 4.D, Thamarai Selvi.; S, Suresh.; R, Sowmiya.; R, Nandhakumar.\*; **J, Prabhu.** Selective fluorescence turn-off sensing for Pd<sup>2+</sup> ion: application in paper strips and cell imaging. UGC and DST-CURIE sponsored one day National Seminar on “Recent Innovations in Science and Technology (RIST-2018)”, Department of Chemistry, Avinashilingam Institute for Home Science and Higher Education for Women (Deemed-to-be University), Coimbatore – 641 043, TamilNadu, India, February 23, 2018. POSTER – P27.

## 2017

1. R. Nandhakumar\*, N, Bhuvanesh.; S, Suresh.; **J, Prabhu.** Graphene Organic Hybrid materials as Fluorescent Chemosensors for Metal Ions. International Conference on Advanced Materials Science and Technology (ICAMST - 2017), Department of Physics, Bannari Amman Institute of Technology, Sathyamangalam, TamilNadu, India, August 17-19, 2017. POSTER – PP141
2. **J, Prabhu.**; K. Velmurugan.; R, Nandhakumar\*. A Ratiometric Chemosensor for Nickel Ion Detection and its Bioimaging. Fifth National Conference on Advanced Functional Materials and Applications (NCAFMA – 2017), Department of Chemistry, Kalasalingam University, Virudhunagar, TamilNadu, India, March 30-31, 2017. POSTER – PP37
3. R, Nandhakumar\*.; N, Bhuvanesh.; S, Suresh.; and **J. Prabhu.** Organic Fluorescent materials for selective detection of Cations. Fifth National Conference on Advanced Functional Materials and Applications (NCAFMA – 2017), Department of Chemistry, Kalasalingam University, Virudhunagar, TamilNadu, India, March 30-31, 2017. POSTER – PP28
4. R, Nandhakumar\*.; N, Bhuvanesh.; S, Suresh.; and **J. Prabhu.** Graphene Organic Hybrid materials for selective detection of Cations. National Conference on Recent Advances in the applications of Macromolecular materials (RAAMM – 2017), Department of Chemistry, The Gandhigram Rural Institute, Gandhigram, Dindigul – 624 302, TamilNadu on March 2-3, 2017. POSTER – PP 21.
5. **J, Prabhu.**; K. Velmurugan.; R, Nandhakumar\*. Organic Fluorescent materials for selective detection of silver and its applications. National Conference on Recent Advances in the applications of Macromolecular materials (RAAMM – 2017), Department of Chemistry, The



Gandhigram Rural Institute, Gandhigram, Dindigul – 624 302, TamilNadu on March 2-3, 2017. POSTER – PP 20.

6. **J, Prabhu.**; K. Velmurugan.; R, Nandhakumar\*. Colorimetric and Fluorimetric Detection of Silver. National Conference on Advanced Functional Materials and their Applications in Engineering (NCAFMAE 2017), Department of Science and Humanities, Dr. NGP Institute of Technology, Coimbatore – 641 048, TamilNadu on January 25, 2017, ORAL – 46.

## 2016

1. R, Nandhakumar\*.; K, Velmurugan.; **J, Prabhu.**; N, Bhuvanesh.; S, Suresh.; Lijun, Tang\*. Benzimidazole-based fluorescent sensor: rapid and highly selective relay recognition of copper and sulfide ions in water. International Conference on Functional Materials (ICFM – 2016), Center for Scientific and Applied Research, PSN College of Engineering and Technology, Tirunelveli – 627152, TamilNadu on September 7-10, 2016. POSTER – P72.

2. R, Nandhakumar\*.; K, Velmurugan.; **J, Prabhu.**; N, Bhuvanesh.; S, Suresh. Multi-analyte, Ratiometric and Relay Recognition of a 2,5-diphenyl-1,3,4-oxadiazole-based Fluorescent Sensor Through Modulating ESIPT. International Conference On Materials For Sustainable Future (ICMSF 2016), Department of Chemistry, School of Chemical and Biotechnology, SASTRA University, Thanjavur – 613 401, TamilNadu on July 14–15, 2016. POSTER – 72. (Best Presentation Award)

3. R, Nandhakumar\*.; K, Velmurugan.; **J, Prabhu.**; N, Bhuvanesh.; S, Suresh. Synthesis, antibacterial, anti-oxidant and molecular docking studies of imidazoquinolines. Two day National Conference on “Advances in Environmental, Synthetic and Medicinal Chemistry, Department of Chemistry, Karpagam University, Coimbatore, TamilNadu, India, April 6-7, 2016, POSTER – MC-011.

4. **J, Prabhu.**; K, Velmurugan.; R, Nandhakumar\*. Effect of Positional isomers for selective sensing of Ag<sup>+</sup> ions via fluorimetric and electrochemical behaviours. Two day National Conference on “Advances in Environmental, Synthetic and Medicinal Chemistry, Department of Chemistry, Karpagam University, Coimbatore, TamilNadu, India, April 6-7, 2016, ORAL – SC – 009.

## 2015

1. **Jeyaraj, Prabhu.**; Krishnaswamy, Velmurugan.; Raju, Nandhakumar\*, Pyrene based ratiometric fluorescent Chemosensor: Selective recognition of Ni<sup>2+</sup> ion and its bio imaging. National Conference on Recent Trends in Bio-inorganic and Organometallic Chemistry (NCBOC – 2015), Sri Shakthi Institute of Engineering and Technology, Coimbatore, TamilNadu, India, October 15-17, 2015, ORAL – 30.

2. **J, Prabhu.**; K, Velmurugan.; R, Nandhakumar\*, Chalcone base ratiometric sensor for nickel ion and its bioimaging applications. 10 th Mid-Year CRSI Symposium in Chemistry , Department of Chemistry, NIT Trichy and Bharathidasan University, Trichy, TamilNadu, India, July 23-25,

2015. POSTER – PP122

3. K. Velmurugan,; **J. Prabhu**,;R. Nandhakumar,\*Pyrene pyridine-conjugate as Ag Selective Fluorescence Chemosensor. 10 th Mid-Year CRSI Symposium in Chemistry,Department of Chemistry, NIT Trichy and Bharathidasan University, Trichy, TamilNadu, India, July 23-25,

2015. POSTER – PP270

4. K. Velmurugan, **J. Prabhu** and R. Nandhakumar\*,The selective detection of silver and carbonate ions using a diurypyrene appended Binolchemosensor.National Conference on Recent Advances in Chemical Sciences – RACS – 15, Department of Chemistry, Gandhigram Rural Institute, Dindugal, Tamilnadu, India, march 5-6, 2015. ORAL – OP-3

## 2014

1. Derin Don, K. Velmurugan, G. Prabhakaran, **J. Prabhu** and R. Nandhakumar\* Single Sensor for dual analytes: chemosensor for selective detection of Aluminium and Bisulfite ions based on a Simple Chalcone. National Seminar on Advances in Materials Chemistry – ADMAC, Christian College, Chengannur, Kerala, October 15-17, 2014. ORAL – OP-17

2. **J. Prabhu**, K. Velmurugan, R. Vickram and R. Nandhakumar,A Simple Chalcone based fluorescent enhanced chemosensor for Pb<sup>2+</sup> ion detection in aqueous media. National Conference on Advancement in Materials Science, Department of Chemistry, Coimbatore Institute of Technology, Coimbatore, India, September 26-27, 2014.ORAL – OD-05

3. K. Velmurugan, **J. Prabhu** and R. Nandhakumar,A fluorescent chemosensor based on a BINOL-PYRENE Congjugate for silver ion. National Conference on Advancement in Materials Science, Department of Chemistry, Coimbatore Institute of Technology, Coimbatore, India, September 26-27, 2014.ORAL – OB-07

Krishnaswamy, Velmurugan.;**Jeyaraj, Prabhu.**; Raju, Nandhakumar\*,Quinoline-Imidazolebased fluorescent sensors for the detection of metal ions in aqueous media.Third National Conference on Advanced Functional Materials and Applications (NCAFMA – 2014), Department of Chemistry and Center for Nanotechnology, Kalasalingam University, Virudhunagar, TamilNadu, India, March 21-22, 2014. ORAL – OP16

4. Krishnaswamy, Velmurugan.;**Jeyaraj, Prabhu.**; Raju, Nandhakumar\*,Quinoline-Imidazole conjugates as Fluorescent Chemosensors for metal ions. III National Conference on “Innovations in Chemistry – Health and Energy” (iCHEM HE 2014),Karunya University, Coimbatore, India, February 6-8, 2014,ORAL – 17

5. Krishnaswamy, Velmurugan.;**Jeyaraj, Prabhu.**; Raju, Nandhakumar\*, A new quinolone benzimidazole conjugate for the highly selective detection of Zn(II) by dual colorimetric and fluorescent turn-on responses. International Conference on “Chemistry – Frontiers & Challenges”, PSGR Krishnammal College for Women, Coimbatore, India, February 5-7, 2014. ORAL – O14

6. **Jeyaraj, Prabhu.**;Krishnaswamy, Velmurugan.; Raju, Nandhakumar\*, A highly selective

ratiometric fluorescent chemosensor for Al<sup>3+</sup> in aqueous media. International Conference on “Chemistry – Frontiers & Challenges”, PSGR Krishnammal College for Women, Coimbatore, India, February 5-7, 2014. ORAL – O22

### 2013

1. **Jeyaraj, Prabhu**,;Krishnaswamy, Velmurugan,; Raju, Nandhakumar\*, A pyrene Pyridine conjugate for Fluorescent Recognition of Ni<sup>2+</sup> ion in Aqueous Media. 3 rd International Science Congress (ISC – 2013),Karunya University, Coimbatore, India, December 8-9, 2013. ORAL – ISCA-ISC—2013-4CS-18
2. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,; Raju, Nandhakumar\*,A new bisbinaphthyl based enantioselective Fluorescent recognition for  $\alpha$ -Hydroxycarboxylic Acids. 3 rd International Science Congress (ISC – 2013),Karunya University, Coimbatore, India, December 8-9, 2013. ORAL – ISCA-ISC—2013-4CS-17
3. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,; Raju, Nandhakumar\*, Imidazoquinoline based fluorescent sensors for the detection of metal ions. National Conference on Chemosensors (NCC – 2013), National Institute of Technology, Tiruchirappalli (NIT-T), India, September 19-20, 2013. ORAL – OP-10.(Best Presentation Award)
4. **Jeyaraj, Prabhu**,;Krishnaswamy, Velmurugan,; Raju, Nandhakumar\*, An anthracene based fluorescent chemosensor for Pb<sup>2+</sup> ion in aqueous media. National Conference on Chemosensors (NCC – 2013), National Institute of Technology, Tiruchirappalli (NIT-T), India, September 19-20, 2013. ORAL – OP-3.
5. Krishnaswamy, Velmurugan,; **Jeyaraj, Prabhu**,;Raju, Nandhakumar\*, Fluorescence sensing with turn “OFF-ON” effect of rutile and anatase TiO<sub>2</sub> based on a Quinolinebenzimidazole conjugate.National Conference on Advanced materials for the emerging technologies (CAMET – 2013),Sri Ramakrishna Mission Vidyalaya College of Arts and Science, Coimbatore, India, July 11-12, 2013. ORAL – OP-03. (Third Prize for Best Presentation)
6. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,;Raju, Nandhakumar\*, A Fluorescent Chemosensor for Ag<sup>+</sup> ion based on a Bispyrene derivative.International Conference on Biological Inorganic Chemistry (ICBIC – 2013),Periyar University, Salem, India. February 20-22, 2013. POSTER – PP-082.
7. **Jeyaraj, Prabhu**,;Krishnaswamy, Velmurugan,; Raju, Nandhakumar\*, A chalcone based fluorescent chemosensor for the detection of Fe<sup>3+</sup> ions at a Physiological pH.International Conference on Biological Inorganic Chemistry (ICBIC – 2013),Periyar University, Salem, India. February 20-22, 2013. POSTER – PP-132.
8. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,; Raju, Nandhakumar\*, A novel binol based fluorescent chemosensor for the detection of Hg<sup>2+</sup> ions in aqueous media. National Conference on Molecules to Materials – solving problems of mankind (NCMM – 2013),Karunya University, Coimbatore, India. February 15-16, 2013.POSTER – PP-08. (Second Prize for Best Presentation)

## 2012

1. **Jeyaraj, Prabhu**,;Krishnaswamy, Velmurugan,; Raju, Nandhakumar\*, “Turn-on” Fluorescent chemosensor for the detection of Ni<sup>2+</sup> and Al<sup>3+</sup> ions in aqueous media. Regional Science Congress, Inidan Science Congress Association,Kongunadu Arts and Science College, Coimbatore, India. December 15-16, 2012. ORAL – C.O.12.
2. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,; Raju, Nandhakumar\*, A novel binol based fluorescent pet chemosensor for mercury ions. Regional Science Congress, Inidan Science Congress Association,Kongunadu Arts and Science College, Coimbatore, India. December 15-16, 2012. ORAL – C.O.3.
3. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,; Raju, Nandhakumar\*, A Novel Florescent Chemosensor for the Detection of mercury ions. National Conference on Nanomaterials (NCNDR. 2012), Karunya University, Coimbatore, India. December 03-04, 2012. POSTER - NCN - PP - 48.
4. **Jeyaraj, Prabhu**,;Krishnaswamy, Velmurugan,; Raju, Nandhakumar\*, A Highly Selective Fluorescent Chemosensor for the detection of Silver ions in aqueous media. National Conference on Advances on Science and Technology (NCAST 12),Saveetha University, Chennai, India. October 31, 2012. ORAL - CH08.
5. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,;Raju, Nandhakumar\*, Highly Selective “Turn-On” Fluorescent Chemosensor for Hg<sup>2+</sup> based on a Binaphthyl derivative. National Conference on Advances on Science and Technology (NCAST 12),Saveetha University, Chennai, India. October 31, 2012. ORAL -CH20. (Best Presentation Award)
6. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,; Raju, Nandhakumar\*,Binol Based Fluorescent Chemosensor for the detection of mercury ions in aqueous media. National Conference on materials for future Technology (NCMFT-2012), Sacred Heart College, Tirupattur, India. September 28, 2012. ORAL – 45.
7. **Jeyaraj, Prabhu**,;Krishnaswamy, Velmurugan,; Raju, Nandhakumar\*, A Novel Chemosensor for Mercury Species. National Conference on materials for future Technology (NCMFT-2012), Sacred Heart College, Tirupattur, India. September 28, 2012. ORAL – 44. (Second Prize for Best Presentation).
8. Krishnaswamy, Velmurugan,;**Jeyaraj, Prabhu**,;Raju, Nandhakumar\*, A selective and sensitive Chemodosimeter for mercury species. Currents Trends in chemistry ( CTriC 2012),CUSAT, Kottayam, Kerala, India, January 20-21, 2012.ORAL – 9.
9. **Jeyaraj, Prabhu**,;Krishnaswamy, Velmurugan,; Raju, Nandhakumar\*, Naphthalene based dosimeter for detection of mercury ions.One day National Conference on Innovations in physics and chemistry ,TejaaShakthi institute of Technology for Women, Coimbatore, TamilNadu, India, February 25, 2012. ORAL – OIC006.

## 2011

1. Velmurugan, K.; **Prabhu, J.**; Nandhakumar, R\*, Calorimetric Sensing of Cu<sup>2+</sup> and Fluorescent Sensing of Fe<sup>3+</sup> in Aqueous media with a Rhodamine B-coumarin conjugate. National Conference on Advanced Functional Materials and Applications (NCAFMA), Department of Chemistry and Centre for Nanotechnology, Kalasalingam University, Krishnankoil, Tamilnadu, India, December 16-17, 2011. ORAL – OP-15.
2. **Jeyaraj, Prabhu.**; Raju Nandhakumar\*, A Selective and Sensitive "Turn-On" Fluorescent Chemodosimeter for Hg<sup>2+</sup> in Aqueous media via Hg<sup>2+</sup> promoted Facile Desulfurization Reaction. International Symposium on Environmental Risk Assessment 2011, Bharathiar University, Coimbatore, India, October 17-19, 2011. POSTER - ECA P12.
3. Raju, Nandhakumar\*.; **Jeyaraj, Prabhu.**; Lijun, Tang.; Fangfang.; Minghui, Liu. A New Rhodamine B coumarin Fluorophore for calorimetric recognition of Cu<sup>2+</sup> and Fluorescent recognition of Fe<sup>3+</sup> in Aqueous Media. International Symposium on Environmental Risk Assessment 2011, Bharathiar University, Coimbatore, India, October 17-19, 2011. POSTER - ECA P10.
4. **Jeyaraj, Prabhu.**; Raju, Nandhakumar\*. A Naphthalene based Fluorescent Chemodosimeter for sensing Hg<sup>2+</sup> in Aqueous media. National Conference on Modern Trends in Science and Technology - MTST-11, Dr. M. V. Shetty Institute of Technology, Mangalore, India, October 14-15, 2011. Oral - C5

### Extra Curricular

- 1) NCC Care officer – 4 Tamil Nadu Battalion, National Cadet Corps
- 2) Himalayan wood Badge certificate holder (Rovers section) received from BSG, India.

## **Patents**

- 1) Ampoule Bottle Penetrator – Patent Number. 533320
- 2) A Device For Determining The Quality Of Milk – Patent Number. 510692

## **Books / Book Chapters**

- 1 Raju Nandhakumar and Jeyaraj Prabhu, Graphene Oxide Materials for Molecular Sensing. Published by Eliva Press, Moldova, Europe. 2022. ISBN : 978-1-63648-547-8.
2. Jeyaraj Prabhu and Raju Nandhakumar. Glass blowing and Welding Technologies for Beginners. Published by IOR International Press, India. 2022. ISBN : 978-93-90853-19-9.

## **Book Chapters**

- 1 Pyrrole Carboxamide Binol Conjugates: Chiral Receptors for Chemical Inversion of L-amino Acids to D-amino Acids. K Velmurugan, L Tang, J Prabhu, R Nandhakumar Progress in Chemical Science Research Vol. 5, 44-56, 2022
2. Quinoline-Benzimidazole Conjugate Based Fluorescent Chemosensor: A Ratiometric Sensor for the Differentiation of Rutile and Anatase TiO<sub>2</sub> Nanoparticles. K Velmurugan, S Suguna, I Sheebha, CI David, B Vidhya, J Prabhu, New Innovations in Chemistry and Biochemistry Vol. 7, 13-25, 2022
3. A Chalcone Based Fluorescent Organic Material (FOM): Efficient Sensing of Lead Ions in Semi-Aqueous Medium. S Suresh, K Velmurugan, J Prabhu, R Nandhakumar New Innovations in Chemistry and Biochemistry Vol. 7, 87-96, 2022

## **Research Group Members**

- 1) Dr. R. Nandhakumar (Research Supervisor & Career Counselor)  
Professor/Chemistry / SSAM
- 2) Dr. K. Velmurugan (Post Doctorial Fellowship/ Jiang University / China)