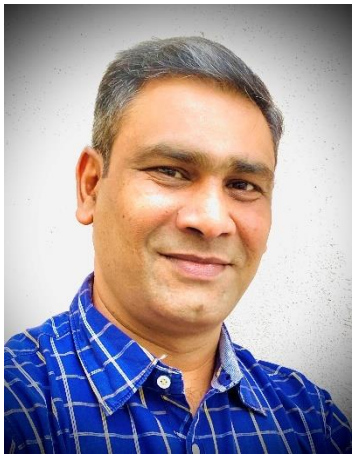
<table>
<tr><td>Name of the Teaching Staff</td><td colspan="3">Raju Nandhakumar</td><td rowspan="6">  </td></tr>
<tr><td>Designation</td><td colspan="3">Professor</td></tr>
<tr><td>Division</td><td colspan="3">Physical Sciences</td></tr>
<tr><td>School</td><td colspan="3">School of Sciences, Arts and Media</td></tr>
<tr><td>Date of Joining the Institution</td><td colspan="3">03 Jan 2011</td></tr>
<tr><td rowspan="2">Qualification with Specialization</td><td>UG</td><td>PG</td><td>Ph.D.</td></tr>
<tr><td>General Chemistry</td><td>General Chemistry</td><td>Synthetic Organic Chemistry</td></tr>
<tr><td>Value Additions</td><td colspan="4">M.Phil., in Synthetic Organic Chemistry, DCA, DICST</td></tr>
<tr><td>Research Expertise</td><td colspan="4">➢ Fluorescent Chemosensors
➢ Supramolecular Chemistry
➢ Chirality
➢ Bioorganic and Medicinal Chemistry
➢ Forensic Chemistry and applications
➢ Carbon based materials for multifarious applications</td></tr>
<tr><td rowspan="2">Subjects Teaching</td><td colspan="2">Under Graduate</td><td colspan="2">Post Graduate</td></tr>
<tr><td colspan="2">Basic biochemistry
Organic Chemistry for Forensic Science
Medicinal chemistry
Nanosafety and environmental issues
Applied chemistry
Engineering chemistry
Environmental sciences
Chemistry for Instrumentation Engineering
Qualitative Analysis and Inorganic preparation Lab
Applied chemistry lab
Applied Chemistry for Food Processing Engineering
Forensic Chemistry
Instrumentation Techniques for Forensic Sciences</td><td colspan="2">Supramolecular Chemistry
Advanced pharmaceutical chemistry
Organic chemistry III
Molecular and materials self-assembly
Molecular machines and materials
Nanotechnology, green chemistry and environmental health
Medicinal chemistry
Synthetic Reagents and Concerted Reactions
Instrumental methods of analysis
Forensic Tools and Techniques
Biochemistry and Biochemical Applications
Research Methodology
Tritimetric and gravimetric analysis practical lab
Synthesis of organic compounds and chromatography lab
Qualitative Analysis and Inorganic preparation Lab
Qualitative analysis and organic preparations lab
Half semester & Full Semester project</td></tr>
<tr><td rowspan="2">Total Experience in Years</td><td>Teaching</td><td>Industry</td><td>Research</td><td></td></tr>
<tr><td>14 years</td><td>0.6 yrs</td><td>27</td><td></td></tr>
<tr><td>Papers Published</td><td>National</td><td>18</td><td>International</td><td>170</td></tr>
<tr><td>Papers Presented in Conference</td><td>National</td><td>many</td><td>International</td><td>many</td></tr>
<tr><td>Conferences / Symposiums / Seminars / Workshops Participated</td><td>National</td><td>many</td><td>International</td><td>many</td></tr>
</table>

<table>
<tr><td>FDP / STTP / MDP / Summer / Winter School attended</td><td colspan="4">10</td></tr>
<tr><td rowspan="2">M.Phil. / Ph.D. Guide ship</td><td colspan="2">Field</td><td colspan="2">University</td></tr>
<tr><td colspan="2">Supramolecular Chemistry, Nanotechnology and Forensic Sciences</td><td colspan="2">Karunya Institute of Technology and Sciences (Deemed-to-be University)</td></tr>
<tr><td>Ph.D. Projects Guided</td><td>Ph.D.s</td><td>Completed: 6
Pursuing: 5</td><td>Project at Master’s Level</td><td>30</td></tr>
<tr><td>Professional Memberships</td><td colspan="4">• Annual member of the American Chemical Society (ACS)
• Life Member of the Materials Research Society of India (MRSI) – LMB2481
• Life Member of the Indian Council of Chemists (ICC) – LF/1628
• Life Member of the Indian Science Congress Association (ISCA) – L22119
• Member of the Research Board of Advisors, The American Biographical Institute. Since 2004
• Life Member of the International Association of Engineers – IAENG
• Member of the Korean Chemical Society (KCS)</td></tr>
<tr><td>Consultancy Activities</td><td colspan="4">• PL & UV recording and analysis
• NMR, Mass and IR spectral analysis</td></tr>
<tr><td>Awards & Honours</td><td colspan="4">• Achievers Award (FOUR patents granted), 2023, Karunya Institute of Technology and Sciences, Coimbatore, India
• Distinguished Professor Award, 2022, Institute of Researchers, Wayanad, Kerala, India
• Achievers Award (h-index), 2022, Karunya Institute of Technology and Sciences, Coimbatore, India
• Achievers Award (patent granted), 2022, Karunya Institute of Technology and Sciences, Coimbatore, India
• Lifetime Achievement Award, 2021, Novel Research Academy, Pudhucherry, India.
• Achievers Award, 2017, Karunya University, Coimbatore , India
• Outstanding Faculty in the field of Medicinal Organic Chemistry, 2016 - Venus International Foundation, Chennai.
• Best Faculty Award, 2016 – Pearl Foundation, Madurai, Tamilnadu, India.
• Best Poster Presentation – (pp-72) - INTERNATIONAL CONFERENCE ON MATERIALS FOR SUSTAINABLE FUTURE (ICMSF 2016) by the Department of Chemistry, School of Chemical and Biotechnology, SASTRA University, Thanjavur – 613 401, TamilNadu on July 14–15, 2016.
• Bharat Gaurav Award, 2016 - India International Friendship Society, New Delhi.
• Best Researcher Award, 2013, Karunya University, Coimbatore, India
• Best Faculty Award in Chemistry – 2013, Nehru College of Educational and Charitable Trust, Coimbatore, India
• SERC Fast Track Proposals for Young Scientists – awarded – Feb. 2011 – Ministry of Science and Technology, Department of Science and Technology (DST), Government of India, New Delhi, India. (No. SR/FT/CS-95/2010 for Rs. 21.65 lakhs)
• Marqui’s Who's Who in the World - 27th Edition, 2010, and 31st Edition, 2014, Biography included for most accomplished men & women in the world.
• Post Doctoral Fellowship by the National Research Laboratories (NRL), Government of South Korea at Bio-Chiral Lab, Division of Nanosciences and Department of Chemistry, Ewha Womans University, World Class University (WCU), Seoul, South Korea.
• Brain Korea - 21 (BK 21) Fellowship by the Government of South Korea for Post doctoral Study at Center for Smart Supramolecules (CSS), National</td></tr>
</table>

	Creative Research Initiative **(NCRI),** POSTECH, World Class University (WCU), Pohang, South Korea. • Awarded ***Senior Research Fellowship (SRF)*** by The Council of Scientific and Industrial Research **(CSIR)**, Ministry of Human Resources Development, Government of India, New Delhi, India. • Awarded ***University Research Fellowship (URF)*** by Bharathiar University, Coimbatore, India. • ***Academic Proficiency*** for securing **First Rank** in under graduate. • ***Academic Proficiency*** for securing **Third Rank** in postgraduate. • National Cadet Corps **{NCC}**, ***"B" Certificate,*** Ministry of Defence, Government of India.
Grants Fetched	• *"Design and Fabrication of Hyperspectral camera for remote sensing".* IIT Tirupati Navavishkar I-Hub Foundation (IITTNiF), IIT Tirupathi. **For 89.90 lakhs.** (Co- Investigator) - January 2024 – Ongoing. • *"Automatic Lubricant Dispensing System with Precise Flow Control"* M/s. HLL Life care Ltd., A government Enterprise, Akkulam, Trivandrum**. For Rs. 9 lakhs** – (Co- Investigator) - January 2024 – Ongoing. • *"Rational Design and Synthesis of Heterocycles Based Modular Fluorescent Chemosensors for Anions and Cations"* Department of Science and Technology (DST), Science and Engineering Research Board (SERB – EMR), Government of India, New Delhi, India. **(No.: SERB-EMR/2016/005692 for Rs. 34.20 lakhs)** – June 2017 – June 2020 - Successfully completed. • Karunya Short Term Research Grant **Rs. 30,000** /- December 2016 –*Successfully completed* • "*Binol based metal complexes for deracemization / resolution of chiral amino acids and amino alcohols: a novel approach for chiral synthesis",* Department of Science and Technology (DST), Government of India, New Delhi, India. **(No. SR/FT/CS-95/2010 for Rs. 20.30 lakhs) –** *Jan 2011 to July 2014 – Successfully Completed* • Karunya Short Term Research Grant for my students (**Rs. 25,000** /- for Mr. J. Prabhu, Ph.D. Research Scholar and **Rs. 6000 /** - for Mr. Derin Don, M.Sc., Chemistry) – *2014, Successfully Completed* • Karunya Short Term Research Grant for my students (**Rs. 15,000** /- for Mr. S. Suresh, Ph.D. Research Scholar and **Rs. 5000 /** - for Mr. Derin Don, M.Phil., Chemistry) – *2014, Successfully Completed* • Karunya Short Term Research Grant for my student (**Rs. 10,000** /- for Mr. Felix, M.Sc., Nanosciences and Nanotechnology) – *2015, Successfully Completed*
Interaction with Professional Institutions	Ewha Womans University, South Korea; Bohai University, China; Bharathiar University, India; Bharathidasan University, India. CLRI, Chennai, India; Periyar University, India, *Nanjing University of Aeronautics and Astronautics, Nanjing, China.* King Saud University, Saudi Arabia.
Educational Details with Institute / University Name	• B.Sc. – SRMVCAS, Bharathiar University • M.Sc. – PSGCAS, Bharathiar University • M.Phil. – Department of Chemistry, Bharathiar University • Ph.D. - Department of Chemistry, Bharathiar University
Experience	➢ **Professor - August 2021 – Present** Division of Physical Sciences (Chemistry), Karunya Institute of Technology and Sciences, Karunya Nagar, Coimbatore, TamilNadu, India. ➢ **Associate Professor - January 2011 – July 2021** Department of Applied Chemistry, Karunya Institute of Technology and Sciences, Karunya Nagar, Coimbatore, TamilNadu, India ➢ **Research Professor - September 2009 – December 2010**

	Prof. Kwan Mook Kim Research Group, Bio-chiral Lab (BCL), Department of Chemistry & Division of Nano Sciences, Ewha Womans University, (WCU), Seoul–120750, South Korea. ➢ **Post doctoral Research Fellow - September 2006 – August 2009** *Prof. Kwan Mook Kim Research Group*, Bio-chiral Lab (BCL), Department of Chemistry & Division of Nano Sciences, Ewha Womans University, (WCU), Seoul – 120 750, South Korea. ➢ **Post doctoral Research Scientist - April 2004 – May 2006** *Prof. Kimoon Kim Research Group*, Center for Smart Supramolecules (CSS), Department of Chemistry, Pohang, University of Science and Technology (POSTECH), (WCU), Pohang, South Korea. ➢ **Researcher - April 2003 – March 2004** *Prof. Kimoon Kim Research Group*, Center for Smart Supramolecules (CSS), Department of Chemistry, Pohang, University of Science and Technology (POSTECH), (WCU), Pohang, South Korea. ➢ **Senior Research Fellow – CSIR - February 2002 – March 2004** *Prof. Mohan P.S. Research Group*, Department of Chemistry, Bharathiar University, Coimbatore, India. ➢ **University Research Fellow - November 2000 – January 2002** *Prof. Mohan P.S. Research Group*, Department of Chemistry, Bharathiar University, Coimbatore - 641 046, India.
Contact Details	Room No. : SHF208 Intercom : 4002 Building : Science & Humanities, Second Floor Phone Number : 91-80984 70837 Email : nandhakumar@karunya.edu / rajunandha@gmail.com Google Scholar : https://scholar.google.co.in/citations?user=OTRGwV4AAAAJ&hl=en Webpage : https://karunya.irins.org/profile/356606

REVIEWS PUBLISHED

1. C. Immanuel David[a], G. Prabakaran[a] and **R. Nandhakumar[a*]** Recent approaches of 2HN derived fluorophores on recognition of Al^{3+} ions: A review for future outlook. ***Microchem. J***. **2021**, 169 106590. https://doi.org/10.1016/j.microc.2021.106590

2. Sivasubramanian Suguna[#] Charles Immanuel David[#] Jeyaraj Prabhu[*] and **Raju Nandhakumar[*]** Functionalized graphene oxide materials for fluorometric sensing of various analytes: A mini review. ***Mater. Adv.,*** **2021,** 2, 6197. https://doi.org/10.1039/D1MA00467K

3. Nitin, P.; **Nandhakumar, R**.;** B, Vidhya.;* S, Rajesh.; A, Sakunthala. COVID-19: Invasion, pathogenesis and possible cure – A review. ***J. Virol. Methods***. **2022,** 300, 114434. https://doi.org/10.1016/j.jviromet.2021.114434

4. G, Prabakaran.; K, Velmurugan.; C, Immanuel David.; and **R, Nandhakumar.*** Role of Förster Resonance Energy Transfer in Graphene-Based Nanomaterials for Sensing. ***Appl. Sci.*** **2022**, 12, 6844. https://doi.org/10.3390/app12146844

5. G, Prabakaran.; C, Immanuel David.; and **R, Nandhakumar*.** A review on pyrene based chemosensors for the specific detection on d-transition metal ions and their various applications. ***J. Environ. Chem. Eng.,*** **2023,** 11, 109701. https://doi.org/10.1016/j.jece.2023.109701

PAPERS PUBLISHED: SELECTED

- T, Johny Dathees.; G, Narmatha.; G, Prabakaran.; Sonai, Seenithurai.; Jeng-Da Chai.; Raju, Suresh Kumar.; J, Prabhu.; **R, Nandhakumar.*** Salicylaldehyde built fluorescent probe for dual sensing of Al^{3+}, Zn^{2+} ions: Applications in latent fingerprint, bio-imaging & real sample analysis. ***Food Chemistry***, **2024**, 441, 138362. https://doi.org/10.1016/j.foodchem.2024.138362
- 176. Deepak, Rosario, J.; Ranjithkumar, R.; Vidhya, B.; Rajesh, Swaminathan.; Sakunthala, Ayyasamy.; **Raju, Nandhakumar.;** J, Suryakanth . Influence of h-BN Concentration on the Development of PVDF-HFP/TiO_2/h-BN Nanocomposite Films for Electroadhesive Applications. ***J. Electron. Mater.*** **2024,** 53, 1058–1066.https://doi.org/10.1007/s11664-023-10861-5
- G, Prabakaran.; K, Velmurugan.; C, Immanuel David.: S, Prince Makarios Paul.; A, Abiram[c,*].; Raju, Suresh Kumar.,; Abdulrahman, I. Almansoure, Karthikeyan, Perumal[,] **R. Nandhakumar.** Imidazole appended rotatable hydroxy quinoline scaffold as dual signaling fluorescent chemosensor: detection of silver ions with hypsochromic shift and hydroxide ions with bathochromic shift and their LFP's, anticounterfeiting, soil analysis and bio-imaging. ***J. Mol. Liq.,*** **2023**, 388, 122733. https://doi.org/10.1016/j.molliq.2023.122733
- G, Prabakaran.; C, Immanuel David.; S, Suresh.; R, Karthick.; R, Ramya.; G, Velraj.; Velu, Rajesh Kannan.; J, Prabhu.; **R, Nandhakumar*.** 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. ***J. Agric. Food Chem***. **2023**, 71, 802-814. ***https://doi.org/10.1021/acs.jafc.2c05823*** **(ACS Publications)**
- R, Ranjithkumar.; J, Deepak Rosario.; Rajesh, Swaminathan.; **Raju, Nandhakumar.;** Vidhya, Bhojan.; Sakunthala, Ayyasamy.* Improved load bearing performance of electroadhesive tapes with Hexagonal boron nitride/Barium titanatecomposite in Poly (vinylidene fluoride cohexafluoropropylene). ***J Mater Sci: Mater Electron***., **2023,** 34, 308. *https://doi.org/10.1007/s10854-022-09543-5*
- S, Suguna.; Anila, puthoor.; D, Parimala devi.; A, Abiram.; **R, Nandhakumar *.;** J, Prabhu. Experimental and theoretical studies on naphthalene-based fluorophores: Applications in detection of Al^{3+} ions in water, soil, food and live cells. ***J Photochem Photobiol A Chem.,*** **2023**, 435, 114268. https://doi.org/10.1016/j.jphotochem.2022.114268
- Govindan Rajivgandhi*, K. Bhavya, B. Vidhya, Naiyf S. Alharbi, Shine Kadaikunnan, Jamal M. Khaled, Khalid F. Alanzi, **R. Nandhakumar**,* Fabrication of graphene oxide-p-phenylenediamine nanocomposites as fluorescent chemosensors for detection of metal ions. ***Environ. Res.*** **2022,** 204, 111914. https://doi.org/10.1016/j.envres.2021.111914
- G, Prabakaran.; R, Vickram.; K, Velmurugan.; C, Immanuel David.; S, Prince Makarios Paul.; Raju, Suresh Kumar.; Abdulrahman I, Almansour.; Karthikeyan, Perumal.; A, Abiram.; J, Prabhu.; **R, Nandhakumar.*** A lead selective dimeric quinoline based fluorescent chemosensor and its applications in milk and honey samples, smartphone and bio-imaging. ***Food Chemistry,*** **2022**, 395, 133617. https://doi.org/10.1016/j.foodchem.2022.133617
- Charles Immanuel David[a], Gunasekaran Prabakaran[a], Kaveri Sundaram[b], Subban Ravi[b*], Duraisamy Parimala devi[c], Angamuthu Abiram[c*] and **Raju Nandhakumar[a*]** Rhodanine-based fluorometric sequential monitoring of silver (I) and iodide ions: Experiment, DFT calculation and multifarious applications. ***J. Hazard. Mater.*** **2021,** 419, 126449. https://doi.org/10.1016/j.jhazmat.2021.126449
- Govindan, Rajivgandhi.; Vimala, RTV,; **Raju, Nandhakumar.;** Murugan Sevanan.; Naiyf S, Alharbi.; Shine, Kadaikunnan.; Jamal M, Khaled.; Khalid F, Alanzi.; Wen-Jun Lia*. Adsorption of nickel ions from electroplating effluent by graphene oxide and reduced graphene oxide. ***Environ. Res.*** **2021,** 199, 111322. https://doi.org/10.1016/j.envres.2021.111322
- 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^{2+}:applications in milk, bioimaging and INHIBIT molecular logic gate. ***Food Chem.,*** **2021,** 348, 129098. https://doi.org/10.1016/j.foodchem.2021.129098
- R, Kumar.; S, Ravi.;* C, Immanuel David.; **R, Nandhakumar.*** A photo-induced electron transfer based reversible fluorescent chemosensor for specific detection of mercury (II) ions and its applications in logic gate, keypad lock and real samples. ***Arab. J. Chem***. **2021,** 14, 102911. https://doi.org/10.1016/j.arabjc.2020.11.017
- Selvaraj, Shyamsivappan.; Arjunan, Saravanan.; Nandakumar, Vandana.; Thangaraj, Suresh.; Shanmugam, Suresh.; **Raju, Nandhakumar.;*** and Palathurai Subramaniam, Mohan.* Novel Quinoline-Based Thiazole Derivatives for Selective Detection of Fe^{3+}, Fe^{2+}, and Cu^{2+} Ions, ***ACS Omega,*** **2020**, 5, 27245-27253. https://dx.doi.org/10.1021/acsomega.0c03445 **(ACS Publications)**
- 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^{3+} ion and its application in live cell imaging. ***J. Anal. Chem*****, 2020**, 75, *12*, 1554-

1564. **DOI:** 10.1134/S1061934820120047.

- C. Immanuel David[a], N. Bhuvanesh[a], Haritha Jayaraj[a], A. Thamilselvan[b] D. Parimala devi[c], A. Abiram[c,*] J. Prabhu [a,*], **and R. Nandhakumar[a,*]** Experimental and theoretical studies on simple S-S bridged dimeric Schiff base: selective chromo-fluorogenic chemosensor for nanomolar detection of Fe^{2+} & Al^{3+} ions and its varied applications. ***ACS Omega***, **2020**, 5, 6, 3055-3072. DOI: 10.1021/acsomega. 9b04294
- N, Bhuvanesh.; S, Suresh.; K, Velmurugan.; A, Thamilselvan.; **R, Nandhakumar*** Quinoline based probes: large blue shifted fluorescent and electrochemical sensing of cerium ion and its biological applications. ***J Photochem Photobiol A Chem*.,** 386, 112103, **2020,** https://doi.org/10.1016 /j.jphotochem 2019.112103
- 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.** https://doi.org/10.1016/j.aca.2019.09.008
- A, Saravanan.; G, Subashini.; S, Shyamsivappan.; T, Suresh.; K, K, Naveen.; K, Kadirvelu.; N, Bhuvanesh.; **R, Nandhakumar.;*** P, S, Mohan.* An efficient new dual fluorescent pyrene based chemosensor for the detection of bismuth (III) and aluminium (III) ions and its applications in bio-imaging. ***Talanta***, **2019**, 198, 249-256. *https://doi.org/10.1016/j.talanta.2019.01.114*
- N, Bhuvanesh.; S, Suresh.; K, Kannan.; V, Rajesh Kannan.; Nikhil, Maroli.; Ponmalai, Kolandaivel.; **R, Nandhakumar*** Bis-anthracene derived bis-pyridine: selective fluorescent sensing of Al^{3+} ion. ***New J. Chem.,*** **2019**, 43, 2519-2528. ***DOI**: 10.1039/c8nj04789h.* **(RSC Publications)**
- Venkatesan, Thangaraj.; Murugesan, Yogapriya.; Kuppulingam, Thirumalai.; Meenakshisundaram, Swaminathan.; Anandhakumar, Sundaramurthy.; **Raju, Nandhakumar.;** Shanmugam, Suresh.; Ekambaram, Vakees.; Arun, Araichimani*. Sol-Gel Synthesis of $Ce_{4-x}Sr_{1+x}Fe_{5-x}Zn_xO_{14+\delta}[0\leq x\leq 0.45]$ Superparamagnetic oxide systems and its Magnetic, Dielectric and Drug delivery properties, ***ACS Omega***, **2018**, 3 (12), 16509-16518. ***DOI:** 10.1021/acsomega.8b02817.* **(ACS Publications)**
- 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^{2+} and Al^{3+} -ions and its imaging in living cells. ***ACS Sustainable Chem. Eng.***, **2018,** *6* (12), pp 16532–16543. ***DOI:** 10.1021/acssuschemeng.8b03625* **(ACS Publications)**
- Mukesh Ekanath Shirbhate, **Raju Nandhakumar***, Youngmee Kim, Sung-Jin Kim, Seong Kyu Kim,* and Kwan Mook Kim,* Discrimination of the Chirality of the α-Amino Acids in ZnII Complexes of DPA-Appended Binaphthyl Imine**.** ***Eur. J. Org. Chem.,*** **2018**, 4959-4964.
- David John, Dmonte.; A, Pandiyarajan.; N, Bhuvanesh.; S, Suresh.; **R. Nandhakumar,*** Graphene oxide resorcinol hybrid material as fluorescent chemosensor for detection of cerium ion. ***Mater. Lett.,*** **2018,** *227,* 154-157.
- 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.
- J, Prabhu.; K, Velmurugan.; A, Raman.; N, Duraipandy.; M.S, Kiran.; S, Easwaramoorthi.; **R, Nandhakumar.*** A Simple Chalcone Based Ratiometric Chemosensor for Sensitive and Selective Detection of Nickel Ion and its Imaging in live cells. ***Sensor Actuat B-Chemical*, 2017,** *238,* 306-317
- Karthikeyan, Krishnamoorthy.; Sakthivel, Thangavel.; Jipsa, Chelora Veetil.; **Nandhakumar, Raju.;** Gunasekaran, Venugopal*.; Sang, Jae Kim.; Graphdiyne nanostructures as a new electrode material for electrochemical supercapacitors. ***Int. J Hydrogen Energ.*** **2016**, *41*, 1672 – 1678.
- K, Velmurugan.; A, Raman.; Derin, Don.; Lijun, Tang.; S, Easwaramoorthi.; **R, Nandhakumar.*** Quinoline benzimidazole-conjugate for the highly selective detection of Zn(II) by dual colorimetric and fluorescent turn-on responses. ***RSC Adv.,*** **2015,** *5, 44463-44469.* **(RSC Publications)**
- Sakthivel, Thangavel.; Karthikeyan, Krishnamoorthy.; Velmurugan, Krishnaswamy.; **Raju, Nandhakumar.;** Sang Jae, Kim.; Gunasekaran, Venugopal*. Graphdiyne-ZnO Nanohybrids as an Advanced Photocatalytic Material. ***J. Phys. Chem. C.,*** **2015,** *119*, 38, 22057–22065 **(ACS Publications)**
- K, Velmurugan.; **R, Nandhakumar.*** Binol based "turn on" fluorescent chemosensor for mercury ion. ***J. Lumin.,*** **2015,** *162,* 8-13. *[Most downloaded article -http://www.journals.elsevier.com/journal-of-luminescence/most-downloaded-articles/]*
- J, Prabhu,; K, Velmurugan.; **R, Nandhakumar.*** Development of fluorescent Lead II sensor based on anthracene derived chalcone. ***Spectrochim. Acta A***, **2015,** *144*, 23-28.
- Lijun, Tang*.; Zhuxuan, Zheng.; Zhenlong, Huang.; Keli, Zhong.; Yanjiang, Bian.; **Raju, Nandhakumar.*** Multi-analyte, ratiometric and relay recognition of a 2,5-diphenyl-1,3,4-oxadiazole-based fluorescent sensor through modulating ESIPT. ***RSC Adv.*** **2015,** *5*, 10505-10511. **(RSC Publications)**

- Paranthaman, Vijayan.; Periasamy, Viswanathamurthi.; Paramasivam Sugumar.; Mondikalipudur, Nanjappagounder, Ponnuswamy.; Manickam, Dakshinamoorthi Balakumaran.; Pudupalayam, Thangavelu, Kalaichelvan.; Krishnaswamy, Velmurugan.; **Raju, Nandhakumar.;** Ray, Jay Butcher. Unprecedented formation of organo-ruthenium(II) complexes containing 2-hydroxy-1-naphthaldehyde S-benzyldithiocarbazate: Synthesis, X-ray crystalstructure, DFT study and biological activities in vitro. ***Inorg. Chem. Front.,*** 70, *8*, 943–948.
- Jeyaraj, Prabhu,; Krishnaswamy, Velmurugan,; **Raju, Nandhakumar***. A highly selective and sensitive naphthalene-based chemodosimeter for Hg^{2+} ions. ***J. Lumin.,*** **2014,** *145*, 733-736.
- Rajendran, Manikandan.; Periasamy, Viswanathamurthi.; Krishnaswamy, Velmurugan.; **Raju, Nandhakumar.;** Takeshi, Hashimoto.; Akira, Endo. Synthesis, characterization and crystal structure of cobalt(III) complexes containing 2-acetylpyridine thiosemicarbazones: DNA/protein interaction, radical scavenging and cytotoxic activities. ***J. Photochem. Photobiol. B,*** **2014,** *130*, 205-216.
- Fang, Wang.; **Raju, Nandhakumar.;** Ying, Hu.; Dabin, Kim.; Kwan, Mook Kim*****.; Juyoung, Yoon*****.BINOL-Based Chiral Receptors as Fluorescent and Colorimetric Chemosensors for Amino Acids. ***J. Org. Chem.,*** **2013.** 78 (22), 11571–11576. **(ACS Publications)**
- Fang, Wang.; Jong, Hun Moon.; **Raju, Nandhakumar.;** Baotao, Kang.; Dabin, Kim.; Kwan, Mook Kim*****.; Jin, Yong Lee*****.; Juyoung, Yoon*****. Zn2+-induced conformational changes in a binaphthyl-pyrene derivative monitored by using fluorescence and CD spectroscopy. ***Chem. Commun*****.,** **2013,** *49,* 7228-7230. **(RSC Publications)**
- Lijun, Tang.; Mingjun, Cai.; Zhenlong, Huang.; Keli, Zhong.; Shuhua, Hou.; Yanjiang, Bian.; **Raju, Nandhakumar.*** Rapid and highly selective relay recognition of Cu(II) and sulfide ions by a simple benzimidazole based fluorescent sensor in water. ***Sensor Actuat B-Chemical*****,** **2013**, *185*, 188-194.
- Haofei, Huang.; **Raju, Nandhakumar.;** Misun, Choi.; Zhishan, Su.*****; Kwan, Mook kim.***** Enantioselective Liquid-Liquid Extractions of Underivatized General Amino Acids with a Chiral Ketone Extractant. ***J. Am. Chem. Soc.,*** **2013,** *135*, 7, 2653-2658. **(ACS Publications)**
- Lijun, Tang.; Nannan, Wang.; Qiang, Zhang.; Jiaojiao, Guo.; **Raju, Nandhakumar.*** A new benzimidazole-based quinazoline derivative for highlyselective sequential recognition of Cu^{2+} and CN^-. ***Tetrahedron Lett.,*** **2013,** *54*, 6, 536-540.
- Fang, Wang.; ‡ **Raju, Nandhakumar.;** ‡ Jong Hun, Moon.; Kwan Mook, Kim.;* Jin Yong, Lee.;* and Juyoung, Yoon.* Ratiometric Fluorescent Chemosensor for Silver Ion at Physiological pH. ***Inorg. Chem.,*** **2011**, *50*, 6, 2240-2245 *(‡ Equally contributed).* **(ACS Publications)**
- Ying, Zhou.;‡ Ji Whan, Kim.;‡ **Nandhakumar, Raju.;**‡ Min Jung, Kim.; Eunae, Cho.; Youn Soo, Kim.; Chongmok, Lee.; Seungwu, Han.; Dong Ha, Kim.; Kwan Mook, Kim.;* Jang-Joo, Kim.;* Juyoung, Yoon.* Novel Binaphthyl-Containing Bi-Nuclear Boron Complex with Low Concentration Quenching Effect for Efficiency Organic Light-Emitting Diodes. ***Chem. Comm*****.,** **2010,** *46*, 6512-6514.*(‡ Equally contributed)* **(RSC Publications)**
- **Raju Nandhakumar,;** Ahn, Yun Soo.; Jooyeon Hong.; Sihyun Ham*.; Kwan Mook Kim.* Enantioselective Recognition of 1,2-Aminoalcohols by the Binol Receptor Dangled with Pyrrole-2-carboxamide and Its Analogues. ***Tetrahedron,*** **2009**, *65*, 3, 666-671.
- Lijun, Tang.; Hyerim, Ga.; Jiyoung, Kim.; Sujung, Choi.; **Raju Nandhakumar,;** Kwan Mook Kim.* Chirality Conversion and Enantioselective Extraction of Amino Acids by Imidazolium-Based Binol-Aldehyde. ***Tetrahedron Lett.,*** **2008**, *49*, 48, 6914-6916.
- Hyunjung Park.; **Raju Nandhakumar,;** Jooyeon Hong.; Sihyun Ham*.; Jik Chin.; Kwan Mook Kim.* Stereo-Conversion of Amino Acids and Peptides in Uryl-Pendant Binol Schiff Bases. ***Chem. Eur. J.,*** **2008**, *14*, 9935-9942.
- **Raju Nandhakumar,;** Jayoung Ryu.; Hyunjung Park.; Lijun Tang.; Sujung Choi.; Kwan Mook Kim.* Effects of Ring Substituents on Enantioselective Recognition of Amino Alcohols and Acids in Uryl Based Binol Receptors. ***Tetrahedron,*** **2008**, *64*, 33, 7704-7708.
- Lijun Tang.; Sujung Choi.; **Raju Nandhakumar,**; Hyunjung Park.; Hyein Chung.; Jik Chin.; Kwan Mook Kim.* Reactive Extraction of Enantiomers of 1,2-Amino Alcohols via Stereoselective Thermodynamic and Kinetic Processes. ***J. Org. Chem.,*** **2008**, *73*, 15, 5996-5999. **(ACS Publications)**
- **Nandhakumar, R***.; Suresh, T.; Calistus Jude, A.L.; Rajesh kannan, V.; Mohan, P.S.* Synthesis, antimicrobial activities and cytogenetic studies of newer diazepino quinoline derivatives via Vilsmeier Haack reaction. ***Euro. J. Med. Chem.,*** **2007**, *42*, 8, 1128-1136.

PATENTS

INTERNATIONAL

2. Kim, Kimoon; Samal, S.; **Nandhakumar, R.**; Selvapalam, N.; Oh, Dong-Hyun. Processes of preparing glycolurils and cucurbiturils using microwave" *PCT Int. Appl. W00511030353,* **3.11.2005.**

1. Kim, Kimoon; Oh, Dong-Hyun; Erumaipatty Rajagounder, Nagarajan; **Nandhakumar, R.**; Choi, Ju-Young; Ko, Young-Ho. Disubstituted cucurbituril-bonded silica gel *PCT Int. Appl. W005113564*, **1.12.2005.**

NATIONAL

S.No	Patent Title	Inventors	Status
1	Novel Material for Electroadhesive Materials, Products, Thereof and Method of Manufacture	Dr. Rajesh Swaminathan Dr. Nandhakumar Raju Dr. Vidhya Bhojan Dr. Sakunthala Ayyasamy Dr. Nitin Patel	Granted Indian Patent Number: 376404 Application No. 202041052409, Dated 1.12.2020
2	Decolouring and Dye Removal Agent	Dr. Sakunthala Ayyasamy Dr. Vidhya Bhojan Dr. Rajesh Swaminathan Dr. Nandhakumar Raju Manjula Raveendranatha Shenoy	Granted Indian Patent Number: 406402 Application No. 202041024472, Dated 11/06/2020
3	Lithium Trivanadate Thin Film Nanorods by Pulsed Laser Deposition Technique	Dr. Rajesh Swaminathan Dr. Sakunthala Ayyasamy Dr. Vidhya Bhojan Dr. Nandhakumar Raju Mr. Rojin Varghese Mr.Shobin Vijay	Granted Indian Patent Number: 533081 Application No. 202041024467, Dated 11/06/2020
4	Method of Making Vertically Aligned Liv_3o_8 Thin Films on FTO By Spray Pyrolysis	Dr. Sakunthala Ayyasamy Dr. Rajesh Swaminathan Dr. Nandhakumar Raju Dr. Vidhya Bhojan	Granted Indian Patent Number: 535442 Application No. 202141009407, Dated 03/09/2021
5	A Fabric Based Electro-Adhesive Clutch Operated Exosuit	Dr. Rajesh Swaminathan Dr. Sakunthala Ayyasamy Dr. Vidhya Bhojan Dr. Nandhakumar Raju	Granted Indian Patent Number: 491894 Application No. 202141040925, Dated 24/09/2021
6	A Polymeric Nanofabric Material to Prevent Microbial Pathogens	Dr. Rajesh Swaminathan Dr. Sakunthala Ayyasamy Dr. Vidhya Bhojan Dr. Nandhakumar Raju Dr.Nitin Patel	Granted Indian Patent Number: 425545 Application No. 202041031484, Dated 23/07/2020
7	Process of Preparation of Magnesium Ion Conducting Electrolyte Membrane and Product Thereof	Dr.A.Sakunthala Dr.S.Rajesh Dr.B.Vidhya Dr.Nandhakumar	Granted Indian Patent. No 405126 Application No. 202141046597, Dated 12/10/2021

8	A Process of Preparing Feo-Go-hBN Composite and Product Thereof	Dr.R. Nandhakumar Dr.J.Prabhu Dr.A.Sakunthala Dr.B.Vidhya Dr.S.Rajesh	Granted Indian Patent Number: 440396 Application No. 202141046596, Dated 12/10/2021
9	Process of Preparation of Zno Nanoparticles Incorporated Bio-Organic Fertilizer and Product Thereof	Dr.B.Vidhya Ms.T.Bincy Dr.A.Sakunthala Dr.Nandhakumar Dr.S.Rajesh	Granted Indian Patent Number: 461596 Application No. 202141046595, Dated 12/10/2021
10	A Preparation Method of Vertically Aligned Carbon Nanotubes and Reduced Graphene Oxide as Lamellar Structure	Ms. P. Priyanka Dr.S. Rajesh Dr.B.Vidhya Dr.A.Sakunthala Dr.Nandhakumar	Granted Indian Patent Number: 538757 Application No. 202241029928, Dated 03/06/2022
11	Ampoule Bottle Penetrator	Dr.J.Prabhu Dr.R. Nandhakumar	Granted Indian Patent Number: 533320 Application No. 202041021145
12	A Device for Determining the Quality of Milk	Dr.J.Prabhu Dr.R. Nandhakumar	Granted Indian Patent Number: 510692 Application No. 202041021189

BOOKS / BOOK CHAPTERS

BOOKS

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

6. **R, Nandhakumar et al.,** Pyrrole Carboxamide Binol Conjugates: Chiral Receptors for Chemical Inversion of L-amino Acids to D- amino Acids. *Progress in Chemical Science Research.* Eds. Oscar Jaime Restrepo Baena, Published by B P International, UK, Vol.5, 44-56, **2022.** First Edition, ISBN 978-93-5547-907-5 (Print), ISBN 978-93-5547-908-2 (eBook), DOI: 10.9734/bpi/pcsr/v5

5. **R, Nandhakumar et al.,** Convenient Synthesis of Orixiarine: Pharmacological and Biological Perspectives. *Current Topics in Chemistry and Biocemistry*. Eds. Dr. Mohamed M. El Nady, Published by B P International, UK, Vol.4, 68-73. **2022**. First Edition. ISBN 978-93-5547-766-8 (Print), ISBN 978-93-5547-767-5 (eBook), DOI: 10.9734/bpi/ctcb/v4

4. **R, Nandhakumar et al.,** A Chalcone Based Flourescent Organic Material (FOM): Efficient Sensing of Lead Ions in Semi-Aqueous Medium. *New Innovations in Chemistry and Biochemistry*, Eds. Ho Soon Min, Published by B P International, UK, Vol.7, 87-96. **2022.** ISBN 978-93-5547-477-3 (print) & 978-93-5547-478-0 (eBook)

3. **R, Nandhakumar et al.,** Quinoline-Benzimidazole Conjugate Based Fluorescent Chemosensor: A Ratiometric Sensor for the Differentiation of Rutile and Anatase TiO2 Nanoparticles. *New Innovations in Chemistry and Biochemistry*, Eds.

Ho Soon Min, Published by B P International, UK, Vol.7, 13 – 25. **2022.** ISBN 978-93-5547-477-3 (print) & 978-93-5547-478-0 (eBook)

2. **R, Nandhakumar et al.,** Binol pyrene Conjugate based fluorescent probe for Silver and carbonate and its bioimaging applications. Published by PG and Research Center of Chemistry, Jayaraj Annapackiam College for Women, Periyakumlam, pp 161, **2019**. ISBN : 978-81-923038-0-2.

1. **R, Nandhakumar,;** N, Bhuvanesh.; K, Velmurugan.; S, Suresh. A grapheme-Organic Composite as a Fluorescent Chemosensor for Ag^{+} *Nanoelectronics and Sensors*, eds. K.E. Geckeler et al, Bloomsbury Publishing India Pvt. Ltd, New Delhi, pp – 173-178, **2015**. ISBN : 978-93-85436-94-9.

Papers Presented in Conference & Symposiums: SELECTED

- **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.*
- J, Prabhu,; K, Velmurugan,; **R, Nandhakumar,*** Chalcone based ratiometric sensor for nickel ion and its bioimaging applications. *10th Mid-Year CRSI Symposium in Chemistry,* Department of Chemistry, NIT Trichy and Bharathidasan University, Trichy, TamilNadu, India, July 23-25, **2015**. *POSTER – PP122*
- K, Velmurugan,; J, Prabhu,; **R, Nandhakumar,*** Pyrene pyridine-conjugate as Ag Selective Fluorescence Chemosensor. *10th Mid-Year CRSI Symposium in Chemistry,* Department of Chemistry, NIT Trichy and Bharathidasan University, Trichy, TamilNadu, India, July 23-25, **2015**. *POSTER – PP270.*
- R. Vickram K. Velmurugan, N. Bhuvanesh and **R. Nandhakumar*** Dimeric Quinoline Schiff base fluorescent chemosensor for Pb^{2+}-ion. *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-33*
- S, Suresh,; K, Velmurugan,; N, Bhuvanesh,; **R, Nandhakumar,*** A simple chalcone based fluorescence enhanced chemosensor for Al^{3+} ion detection in aqueous media. *10th Mid-Year CRSI Symposium in Chemistry,* Department of Chemistry, NIT Trichy and Bharathidasan University, Trichy, TamilNadu, India, July 23-25, **2015**. *POSTER – PP38*
- 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*
- **Raju, Nandhakumar.;*** Krishnaswamy, Velmurugan, Enantioselective Recognition of 1,2-Amino Alcohols by a Chiral Dimeric Binol based Receptor. *International Conference on "Chemistry – Frontiers & Challenges",* PSGR Krishnammal College for Women, Coimbatore, India, February 5-7, **2014**. *POSTER – P17*
- Krishnaswamy, Velmurugan.; Jeyaraj, Prabhu.; **Raju, Nandhakumar*,** A new quinoline-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*
- Jeyaraj, Prabhu,; Krishnaswamy, Velmurugan,; **Raju, Nandhakumar***, A pyrene Pyridine conjugate for Flourescent Recognition of Ni2+ ion in Aqueous Media. *3rd International Science Congress (ISC – 2013),* Karunya University, Coimbatore, India, December 8-9, **2013**. *ORAL – ISCA-ISC—2013-4CS-18*
- 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)**
- Krishnaswamy, Velmurugan,; Jeyaraj, Prabhu,; **Raju, Nandhakumar*,** A novel binol based fluorescent chemosensor for the detection of Hg^{2+} 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)**
- Krishnaswamy, Velmurugan,; Jeyaraj, Prabhu,; **Raju, Nandhakumar*,** Highly Selective "Turn-On" Fluorescent Chemosensor for Hg^{2+} 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)**

- Fang, Wang.; **Raju, Nandhakumar.;** Kwan Mook, Kim.;* Juyoung, Yoon.* Binaphthyl based fluorescent chemosensors for chiral recognition and anion recognition. *The International Chemical Congress of Pacific Basin Societies, (Pacific Chem),* Honolulu, Hawaii, USA, December 15-20, **2010**. (Final Abstract ID: 2295).
- **Nandhakumar, Raju.;** Kwan Mook, Kim.* Enantioselective Recognition of Amino Alcohols and Chirality Conversion of Amino Acids by Carbonylurea-based Imine Receptors. 104th *National Meeting of the Korean Chemical Society (KCS)*, Daejon Conventional Center (DCC), Daejon, South Korea, October 29-30, **2009,** *III37P248.*
- Wang, Fang; Zhou, Ying; Jou, Minjung; **Nandhakumar, Raju.;** Yoon, Juyoung.* Synthesis and characterization of novel derivative of [1,1']binaphthalene containing dihydro-pyrene ring. Abstracts of Papers, 238th American Chemical Society National Meeting (ACS), Washington, DC, United States, August 16-20, **2009,** *ORGN-504.*
- **Nandhakumar**, **Raju**.; Jiyoung, kim.; Hyunjung, Park.; Kwan Mook, Kim.* Resonance Assisted Hydrogen Bonding: Enantioselective recognition of 1,2-amino alcohols by chiral binol based receptors. *101st National Meeting of the Korean Chemical Society (KCS)*, Kintex, Seoul, South Korea, April 17-18, **2008**, *V32P165.*
- **Nandhakumar**, **Raju.**; Jayoung, Ryu.; Hyunjung, Park.; Lijun, Tang.; Sujung, Choi.; Kwan Mook, Kim.* Effects of Substituents on Uryl Based Binol Aldehyde Receptor: Enantioselective Recognition of Amino Acids and Amino Alcohols. *19th International Symposium on Chirality*, Chirality-2007, San Deigo, California, USA, July 8-11, **2007,** *P-243.*

INVITED LECTURES

Delivered many invited lectures at Conferences / Workshops / Seminars / FDP's / Guest lectures etc.

RESEARCH GROUP MEMBERS

PRESENT

Ph.D., Chemistry

- Ms. G. Narmatha (Research Associate)
- Sister Johny Dathees
- Ms. Elizabeth Antony (Research Associate)
- Ms. S. Kavanya (Research Associate)
- Mr. R. Ramprasad

ALUMNI

Ph.D., Chemistry

1. **Dr. K. Velmurugan** (Nov 2011 - Feb 2017) - (DST-JRF & CSIR - SRF)
[*Post Doctoral Research Fellow, College of Material Science and Technology, Nanjing University of Aeronautics and Astronautics, Nanjing - 211 100,* ***CHINA****]*

2. **Dr. J. Prabhu** (Nov 2011 - Feb 2017) - KSTRG
[Assistant Professor, Department of Chemistry, Karunya Institute of Technology and Sciences (Deemed to be University), Coimbatore – 14, ***INDIA***]

3. **Dr. N. Bhuvanesh** (Aug 2014 - May 2019)
[Lecturer, The Elite English School, Al Waheeda Road, Deira, Dubai, ***UAE***]

4. **Dr. S. Suresh** (Aug 2013 - Oct 2019)
[*Post Doctoral Research Fellow, Ruder Boskovic Institute, Zagreb,* ***CROTIA****]*

5. **Dr. C. Immanuel David** (July 2016 – June 2022) (DST-JRF)
[*Post Doctoral Research Fellow, University of Ulsan, Ulsan,* ***SOUTH KOREA****]*

6. **Dr. G. Prabakaran** (July 2019 – June 2023)
[*Post Doctoral Research Fellow*, Shenzhen University, Shenzhen, ***CHINA****]*

M.Phil., Chemistry

1. Mr. Derin Don (Nov. 2013-Nov. 2014)
2. Mr. G. Prabakaran *(Aug 2014- Sep 2015)*
3. Mr. R. Vickram (Aug. 2014 - April. 2016)