Dr. K. N. MOHANA
Professor
Department of Studies in Chemistry
Manasagangotri
University of Mysore, Mysuru – 570 006
Karnataka, INDIA



### **PERSONAL DETAILS**

Date of birth: July 20th, 1966

Marital status: Married

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+91-94496 27573 (S) +91-821-2419654 (Department)

M drknmohana@gmail.com

B. Sc. (UOM-1987); M.Sc. (UOM-1989); Ph. D. (UOM-1998) \*UOM – University of Mysore

Title of the thesis: "Physicochemical Aspects of Bromamine-B"

Designation: PROFESSOR

#### **TEACHING EXPERIENCE**

Teaching since 1989 (both UG and PG): Teaching M. Sc. Chemistry, M. Sc. Organic Chemistry, and M. Phil., Chemistry. Teaching Chemical Thermodynamics, Chemical Kinetics, Electrochemistry, Photochemistry, Nuclear Chemistry, Radiation Chemistry and Molecular Spectroscopy for M. Sc. and M. Phil. Courses.

### **RESEARCH EXPERIENCE:** Actively engaged in Research since 1993

#### **RESEARCH AREA**

- ➤ Development of nanohybrids / nanocomposites for anti-corrosion and electrochemical applications.
- Design and synthesis of organic compounds for corrosion inhibition of metals.
- > Kinetics and mechanistic study of some biologically active / pharmaceutical compounds.

### PROJECTS COMPLETED / ON-GOING

- 1. Minor research project entitled "Mechanistic studies on the oxidation of some biologically active compounds" funded by University of Mysore, Mysore during the year 2006 2008.
- Major research project entitled "Phytochemical and inhibitive performance studies of some plants
  of Western Ghats of Karnataka on the corrosion of mild carbon steel in industrial water medium"
  funded by University of Mysore, Institution of Excellence under Centre of Excellence in
  Biodiversity, Bio- prospecting and Sustainable Development, during the year 2010-2013.

### **RESEARCH PUBLICATIONS: 145**

### RESEARCH PAPERS COMMUNICATED FOR PUBLICATION: 08

PAPERS PRESENTED AT CONFERENCES / SYMPOSIA: 38

NUMBER OF Ph.D. STUDENTS GUIDED SUCCESSFULLY: 14

NUMBER OF Ph. D. STUDENTS WORKING: 08

NUMBER OF M. Phil. STUDENTS GUIDED SUCCESSFULLY: 03

### **DETAILS OF Ph. D. DEGREE SUCCESSFULLY GUIDED**

- N. Prasad Awarded Ph. D. in 2008, "Oxidation of bio-active compounds with sodium N-haloaryl sulphonamides: A kinetic and mechanistic study". Uni. Notification No. Ex. 9.2/Ph. D/NP/2005-06 dated 25-01-2008.
- 2. Badea Abdullah Mohammed Mahyoub Awarded Ph. D. in 2009, "Corrosion and corrosion inhibition behaviour studies on low and medium carbon steel pipes in industrial water". Uni. Notification No. Ex. 9.2/Ph. D/BA/2006- 07dated 08-10-2009.
- 3. P. M. Ramadas Bhandarkar Awarded Ph. D. in 2010, "Oxidation of certain drugs of pharmaceutical interest with N-bromosuccinimide: A kinetic and mechanistic study". Uni. Notification No. Ex. 9.2/Ph. D/PMRB/2005-06 dated 01-03-2010.
- 4. L. Mallesha Awarded Ph. D. in 2011, "Synthesis, characterization, crystal structure and biological studies of some organic compounds of pharmaceutical importance". Uni. Notification No. Ex. 9.2/Ph. D/LM/2007-08 dated 30-07-2011.
- 5. K. P. Harish Awarded Ph. D. in 2014. "Synthesis, characterization and biological screening of new heterocycles containing oxadiazole, thiadiazole, Indazole, pyrazine and pyridine groups". Uni. Notification No. Ex. 9.2/Ph. D/KPH/2008-09 dated 11-03-2014.
- 6. S. S. Shivakumar Awarded Ph. D. in 2014, "Corrosion inhibitors behaviour studies on mild steel in industrial water and acid medium". Uni. Notification No. Ex. 9.2/Ph. D/SSS/2008-09 dated 15-03-2014.
- 7. C. B. Pradeep Kumar Awarded Ph. D. in 2014, "Antioxidant activities of new thiazole, oxadiazole, piperidine derivatives and certain plants extracts, and their anticorrosion properties on mild steel". Uni. Notification No. Ex. 9.2/Ph. D/CBP/2011-12 dated 26-05-2014.
- 8. B. N. Prasanna Kumar Awarded Ph. D. in 2014, "Synthesis and biological screening of new *Pyrimidine, oxadiazole and triazole derivatives*". Uni. Notification No. Ex. 9.2/Ph. D/BNP/2009-10 dated 30-08-2014.
- 9. D. M. Gurudatt Awarded Ph. D. in 2014, "Synthesis of some novel nitrogen containing heterocycles and study of their antioxidant activity, and corrosion inhibition performance on mild steel". Uni. Notification No. Ex. 9.2/Ph. D/GDM/2009-10 dated 05-12-2014.

- M. P. Chakravarthy Awarded Ph. D. in 2014, "Synthesis and corrosion inhibition study of isoniazide, nicotinamide and dapsone derivatives for mild steel in acid media". Uni. Notification No. Ex. 9.2/Ph. D/CMP/2010-11 dated 25-02-2015.
- T. K. Chaitra Awarded Ph. D. in 2017, "Synthesis and Corrosion Inhibition Behaviour of Some New Heterocyclic Derivatives on Mild Steel in Acid Media" Uni. Notification No. Ex. 9.9/Ph. D/CTK/2012-13 dated 04-07-2017.
- 12. Rajitha K Awarded Ph.D. in 2020, "Synthesis of carbon based nanomaterials and their anti-corrosion properties on mild steel" Uni. Notification No. Ex. 9.4/Ph. D./RK/2015-16 dated 15-12-2020.
- 13. Mahesh Bhaskar Hegde Awarded Ph.D. in 2020, "Synthesis of graphene based nanomaterials and their selected applications" Uni. Notification No. Ex. 9.4/Ph. D./MBH/2015-16 dated 15-12-2020.
- 14. Saurav Ramesh Nayak Awarded Ph.D. in 2020, "Modification of carbon based nanomaterials and their anti-corrosion and photocatalytic applications" Uni. Notification No. Ex. 9.4/Ph. D./SRN/2014-15 dated 15-12-2020.

### **DETAILS OF M. Phil. STUDENTS**

- 1. K. R. Ramya Awarded M. Phil. in 2007, "Kinetic and mechanistic studies on ruthenium (III)-catalyzed oxidation of bio-active compounds with N-bromosuccinimide".
- 2. H. N. Deepakumari Awarded M. Phil. in 2009, "Corrosion and corrosion inhibition mechanism of imatinib mesylate on mild carbon steel in sulphuric acid medium".
- 3. Sameer Ahmed Bhat Awarded M. Phil. in 2014, "Adsorption and corrosion inhibition characteristics of some triazole Schiff bases on mild steel in hydrochloric acid solution".

# RESEARCH PAPERS PUBLISHED IN SOME IMPORTANT JOURNALS

- 1. Effect of temperature and fluid velocity on corrosion mechanism of low carbon steel in presence of 2-hydrazino-4,7-dimethylbenzothiazole in industrial water medium, *Corrosion Science*, 51 (2009) 2231–2241. (Impact Factor: 7.205).
- 2. Effect of sodium nitrite—borax blend on the corrosion rate of low carbon steel in industrial water medium, *Corrosion Science*, 50 (2008) 2939–2947. (Impact Factor: 7.205).
- 3. Synthesis of novel 1-[5-(4-methoxy-phenyl)-[1, 3, 4] oxadiazol-2-yl]-piperazine derivatives and evaluation of their in vivo anticonvulsant activity, *European Journal of Medicinal Chemistry* (2013) **65**, 276 283. (Impact Factor: **6.514**)
- 4. Thermodynamic, electrochemical and quantum chemical evaluation of some triazole Schiff bases as mild steel corrosion inhibitors in acid media, *Journal of Molecular Liquids*, 211 (2015) 1026–1038. (Impact Factor: 6.165).
- 5. Fluorine Substituted Thiomethyl Pyrimidine Derivatives as Efficient Inhibitors for Mild Steel Corrosion in Hydrochloric Acid Solution: Thermodynamic, Electrochemical and DFT Studies, *Journal of Molecular Liquids*, (2020) **311**, 113311. (Impact Factor: 6.165).

- 6. Inhibition activity of new thiazole hydrazones towards mild steel corrosion in acid media by thermodynamic, electrochemical and quantum chemical methods, *Journal of the Taiwan Institute of Chemical Engineers*, (2016), **67**, 521 531. (Impact Factor: **5.876**).
- 7. Corrosion inhibition efficiency and adsorption characteristics of some Schiff bases at mild steel/hydrochloric acid interface, *Journal of the Taiwan Institute of Chemical Engineers*, (2014) **45**, 1031–1042. (Impact Factor: 5.876).
- 8. Functionalized graphene oxide-epoxy phenolic novolac nanocomposite: An efficient anticorrosion coating on mild steel in saline medium, *Advanced Composites and Hybrid Materials*, (2020) **3(2)**, 141–155. (Impact Factor: 5.693).
- 9. Functionalized multi-walled carbon nanotube/polyindole incorporated epoxy: An effective anti-corrosion coating material for mild steel, *Journal of Alloys and Compounds*, (2020). (Impact Factor: 5.316).
- 10. Fabrication of ZnO/rGO and ZnO/MWCNT nanohybrids to reinforce the anticorrosion performance of polyurethane coating, *FlatChem*, (2020) **24**, 100208. (Impact Factor: 5.227).
- 11. Reduced Graphene Oxide-Epoxidized Linseed Oil Nanocomposite: A Highly Efficient Bio-based Anti-Corrosion Coating material for Mild Steel, *Progress in Organic Coatings*, (2021) 159,106399. (Impact Factor: 5.161).
- 12. Development of Al<sub>2</sub>O<sub>3</sub>.ZnO/GO-phenolic formaldehyde amine derivative nanocomposite: A new hybrid anticorrosion coating material for mild steel, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, (2020) **601**,125036. (Impact Factor: **4.539**)
- 13. Evaluation of anti-corrosion performance of modified gelatin-graphene oxide nanocomposite dispersed in epoxy coating on mild steel in saline media, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, (2020), **587**, 124341. (Impact Factor: **4.539**).
- 14. Corrosion protection performance of functionalized graphene oxide nanocomposite coating on mild steel, *Surfaces and Interfaces*, (2018), 11, 63 73. (Impact Factor: 4.837).
- 15. Protection of Mild Steel Corrosion by three New Quinazoline Derivatives: Experimental and DFT Studies, *Surfaces and Interfaces*, (2020) **18**, 100446. (Impact Factor: **4.837**)
- 16. An efficient and eco-friendly anti-corrosive system based on Beeswax- Graphene oxide nanocomposites on mild steel in saline medium, *Surfaces and Interfaces*, (2020), **18**,100393. (Impact Factor: **4.837**)
- 17. Synthesis of New Pyridine Based 1,3,4-Oxadiazole Derivatives and their Corrosion Inhibition Performance on Mild Steel in 0.5 M Hydrochloric Acid, *Industrial and Engineering Chemistry Research*, (2014) **53**, 2092–2105. (Impact Factor: 3.573).
- Centella asiatica extracts as green corrosion inhibitor for mild steel in 0.5 M sulphuric acid medium, Advances in Applied Science Research, (2012) 3(5), 3097-3106. (Impact Factor: 3.52).
- 19. Application of modified graphene oxide Polycaprolactone nanocomposite coating for corrosion control of mild steel in saline medium, *Materials Chemistry and Physics*, 241 (2020) 122050. (Impact Factor: 4.094).

- 20. Synthesis of graphene oxide-based nanofillers and their influence on the anticorrosion performance of epoxy coating in saline medium, *Diamond and Related Materials*, **108** (2020) 107974. (Impact Factor: 3.315).
- 21. Synthesis and antiproliferative activity of some new fluorinated Schiff bases derived from 1,2,4-triazoles, *Journal of Fluorine Chemistry*, (2013), **156**, 15–20. (Impact Factor: **2.33**).
- 22. Garcinia gummigutta vegetable oil-graphene oxide nano-composite: An efficient and eco-friendly material for corrosion prevention of mild steel in saline medium, *Journal of Polymers and the Environment*, (2020) **28**, 483. (Impact Factor: 3.667).
- 23. Anticorrosion performance of 4- fluoro phenol functionalized graphene oxide nanocomposite coating on mild steel, *Journal of Fluorine Chemistry*, (2019), **228**, 109392. (Impact Factor: **2.33**).
- 24. A sustainable and eco-friendly polymer based graphene oxide nanocomposite anti-corrosion coating on mild steel, *ChemistrySelect*, (2020), **5(4)**, 1506-1515. (Impact Factor: **2.109**).
- 25. Corrosion Mechanism of Low-Carbon Steel in Industrial Water and Adsorption Thermodynamics in the Presence of Some Plant Extracts, *Journal of Materials Engineering and Performance*, (2009) **18**, 1264 1271. (Impact Factor: 1.889).

# PAPERS PRESENTED IN CONFERENCES / SYMPOSIA

- X-Ray Debye Temperature in a Series of Organic Haloamines. Presented (in absencia) at the 212th American Chemical Society National Meeting held at ORLANDO, FLORIDA, USA from Aug. 25 to 29, 1996 (PHYSICAL - Paper No. 96).
- 2. Conductometric study of the Interaction of Bromamine-B with Siliver(I), Mercury(II), Thorium(IV) and Zirconium(IV) Solutions. Presented at the 32nd Annual Convention of Chemists, held at Jaipur, India, from Dec. 26 to 29, 1995 (PHYSICAL 92).
- 3. Kinetics and Mechanism of Oxidation of Cyclopentanone and Cyclohexanone by Bromamine-B in Perchloric Acid Medium. Presented at the 33rd Annual Convention of Chemists, held at Coimbatore, India from Dec. 26 to 29, 1996 (PHYSICAL 20).
- 4. Thermal and Photochemical Decomposition of Aqueous Bromamine-B. Presented at the 33rd Annual Convention of Chemists, held at Coimbatore, India from Dec. 26 to 29, 1996 (PHYSICAL 24).
- 5. Silver salt of N-Bromo-4-methyl benzenesulphonamide as a new oxidimetric reagent. Presented at the 19th Indian Council of Chemists, held at Shimoga, India from Dec. 22 to 24, 2000 (AO-23).
- 6. Determination of Quantum yield for the photolysis of aqueous solution of chloramines-B. Presented at the 37<sup>th</sup> Annual Convention of Chemistry held at Gurukula Kangri University, Hardwar, U, P, India, from Nov. 15 18, 2000 (PHYSICAL OP 46).
- 7. The O-Na Interaction and Octahedral Geometry around Sodium Moiety in Sodium salt of N-bromo-4-methyl benzenesulphonamide. Presented at the 37<sup>th</sup> Annual Convention of Chemistry held at Gurukula Kangri University, Hardwar, U. P., India, from Nov. 15 18, 2000 (PHYSICAL OP 29).

- 8. Crystal structure of 2-N-butyl-4-chloro-1[(2'-cyanobiphenyl-4-yl) methyl]-5-hydroxymethyl imidazole. Presented (in absencia) at the IV meeting of Asian Crystallographic Association held at Indian Institute of Science, Bangalore, India from Nov. 28 to 21, 2001 (A4-32).
- 9. 20th Conference of Indian Council of Chemists held at the Department of Studies in Chemistry, Manasagangotri, Mysore, from Dec. 22 to 24, 2001.
- 10. 90th Indian Science Congress held at Bangalore from Jan. 3 to 6, 2003.
- 11. National seminar on Role of Chemistry in emerging areas of applied sciences held at S.V. University, Tirupathi, from March 15<sup>th</sup> to 17<sup>th</sup>, 2004.
- 12. International conference on water and health, WAH 2005, held at Jayachamarajendra College of Engineering, Mysore, January, 22-23, 2005. Title: Facile Spectrophotometric determination of trace amount of nitrites in water and soil samples, S2-pp110, Page.No.175.
- 13. National Symposium on Bioorganic and Medicinal Chemistry-NSBM 2005 held at Department of Studies in Chemistry, Manasagangotri, Mysuru from October 5-7 2005. Title: Oxidation of 2-phenylethylamine with sodium N-chlorobenzenesulphonamide using ruthenium (III) chloride as catalyst in hydrochloric acid solution: A kinetic and mechanistic study. PP40, page No.656.
- 14. National conference on Chemical Sciences for Industry and Society held at Department of Industrial Chemistry, Kuvempu University, Shankaraghatta-577 451 from January 6-8, 2006. Title: Oxidation of 2-phenylethylamine with N-bromosuccinimide in acid and alkaline media: A kinetic and mechanistic study. PP50, page No.35.
- 15. International conference on Materials for the Millennium held at Department of Applied Chemistry, Cochin University of Science and Technology, Kochi, India from March 1-3, 2007. Title: Ruthenium (III)-catalyzed oxidation of vitamin B6 with sodium N-chlorobenzenesulfonamide in hydrochloric acid medium: A kinetic and mechanistic approach. OP-7, page No.30.
- 16. Three days International conference on Frontiers in Chemical Research (ICFCR-2008) held at Department of Chemistry, Mangalore University, Mangalagangotri, Mangalore, India from December 29-31, 2008. Title: Oxidative cleavage of salbutamol with N-bromosuccinimide in acid and alkaline media: A kinetic and Mechanistic Study. PP- 43, page No.73.
- 17. Three days International conference on Frontiers in Chemical Research (ICFCR-2008) held at Department of Chemistry, Mangalore University, Mangalagangotri, Mangalore, India from December 29-31, 2008. Title: Corrosion Mechanism of low carbon steel in industrial water and adsorption thermodynamics in presence of some plant extracts. PP-89, page No.104.
- 18. Two days National Conference on Chemistry and Molecular Nanotechnology for Industry and Society (NCMNIS-2009) held at Department of Industrial Chemistry, Kuvempu University, Shimoga from 16-17<sup>th</sup> January, 2009. Title: Preparation and Crystal Structure analysis of 2',3'-Di-O-Acetyl-5'-Deoxy-5-fluorocytidine. PP (OC)-06, page No. 49.
- 19. Two days national conference on the emerging areas in chemistry held at Department of chemistry, Manasagangotri, University of Mysore, Mysore, from July-August, 2009. Title: (1). Novel study of passivation as an isotherm on metals surface: theoretical and experimental approach. PP-37, page No.60. (2).Oxidative Cleavage of Gabapentin with *N*-bromosuccinimide

- in acid medium: A kinetic and mechanistic study. PP-48, page No.66. (3). Synthesis and antimicrobial activity of charge-transfer complexes of *N*-(5-Amino-2-methylphenyl)-4-(3-pyridyl)-2-pyrimidinamine with some acceptors. PP-93, page No.92.
- The 238th ACS national meeting held at Washington, DC, USA, from August 16-20, 2009. Title:

   Unusual hydrogen bonding effects in biomolecules, PP INOR-486-487, (presented inabsencia).
   Intermolecularly associated carboxylic acid dimers in the supermolecular assembly of 1, 4-benzodioxane 2-carboxylic acid. PP INOR-137, (presented inabsencia).
- 21. Two days international conference on current trends in chemistry and biochemistry held at Department of Chemistry and Biochemistry, Central college campus, Bangalore University, Bangalore from December 18-19, 2009. Title: Mechanistic investigation of oxidation of metronidazole and tinidazole with *N*-bromosuccinimide in acid medium: A kinetic approach. PP-295, page No.260.
- 22. Two days national conference on Materials: Nano to macro dimensionality and their varied applications held at Department of chemistry, Manonmanian Sundaranar University, Tirunelveli, Tamil Nadu from January 28-29, 2010. Title: Synthesis, Characterization and *In Vitro* Antimicrobial Activity of Novel 2-Methyl-5-nitroaniline Derivatives. PP-36, page No.68.
- 23. Two days national seminar on recent research trends in synthetic organic and natural products chemistry held at Department of Chemistry, Sri Venkateswara University, Tirupati from March 29-30, 2010. Title: Synthesis and antioxidant activity of novel 1-(1, 4-benzodioxane-2-carbonyl)piperazine derivatives. PP-74, page No.81.
- 24. Two days National conference on Social relevance to chemical sciences (SRCS-2011) held at the department of chemistry, Kuvempu University, Shankaraghatta, Shimoga District from March 26 27, 2011. Title: Corrosion inhibition and adsorption properties of syzygium cumini leaves extracts on mild steel in acid medium. PP-90, Page No. 44.
- 25. Participated in the one day work shop for revising and designing syllabi (UG) organised by the department of chemistry, JSS College of Arts, Commerce and Science, Mysore on December 31st 2013.
- 26. Participated in the one day work shop for formulation of syllabus for PG chemistry organised by the department of chemistry, JSS College for women, Mysore on January 23<sup>rd</sup> 2013.
- 27. Two days International symposium on "Chemical biology-Drug discovery programme" held at the University of Mysore, Mysore from January 9 10, 2014. Title: Synthesis and antioxidant activity of 2-amino-5-methylthiazol derivatives containing 1,3,4-oxadiazole-2-thiol moiety. PP-24, page No. 22.
- 28. Two days National conference on "Recent Trends in Chemical Research" held at Sri Jayachamarajendra College of Engineering, Mysore from January 3 4, 2014. Title: Influence of some synthesized Pyrimidine derivatives on corrosion inhibition of mild steel in hydrochloric acid medium. PP-01, Page No. 49 and "Synthesis of Pyrimidine base piperidine sulphonamides as new class of anticorrosive agents: Chemical and electrochemical studies" PP-24, page No. 66.

- 29. Two day UGC sponsored National Conference on "Supramolecules and Nanomaterials" held at St. Phil. College, Mysore from August 22 23, 2014. Title: Synthesis of some new 1, 2, 4-triazole derivatives and their anticorrosion properties on mild steel in hydrochloric acid medium.
- 30. Two day UGC sponsored National Conference on "Recent Trends in Bioorganic Chemistry and its Applications to Society" RTBAS-2014 held at the Department of Chemistry and Biochemistry, Sarada Vilas College, Mysore from September 26 27, 2014. Title: Corrosion inhibition of mild steel in hydrochloric acid solution by some new nitrogen containing organic molecules.
- 31. Three day National Conference on Pure and Applied Chemistry (NACOPAC-2014) held at the Department of Studies in Chemistry, University of Mysore, from December 29 31, 2014, Title: Investigation of the Inhibiting Effect of Some Schiff bases of Triazole for the Corrosion of Mild Steel in Acid medium.
- 32. Participated in one day seminar on Recent Innovations in Bio-inorganic and Medicinal Chemistry held at the department of chemistry, The National Institute of Engineering, Mysore on January 28, 2015.
- 33. Participated in Five day Indian Science Congress held at the University of Mysore, Mysore from January 03-07, 2016.
- 34. Participated in Recent Innovations in Medicinal and Material Chemistry (RIMMC-2019) held in the Department of Studies in Chemistry, Manasagangotri, Mysuru from March 8 9, 2019.
- 35. Participated in Advanced Functional Materials for Energy, Environment and Health Care (AFMEEHC) held at Centre for Material Science and Technology, University of Mysore, Manasagangotri, Mysuru from March 18 20, 2019.

### **PROFESSIONAL AFFILIATIONS**

Life Member: Indian Science Congress Association (ISCA)

Life Member: Indian Association of Nuclear Chemists and Allied Scientists (IANCAS)

**Life member:** Mysore University Teachers Association

Life member: Mysore University Post-graduate Teachers Association

### **MEMBER:** BOARD OF STUDIES AND BOARD OF EXAMINATIONS

#### **Member BOS**

- 1. PG, Yuvaraja's College, University of Mysore, Chemistry, since 2020.
- 2. PG, KSOU, Mysuru, since 2020.
- 3. UG, Gulbarga University, Chemistry, since 2000.
- 4. PG, Bangalore University, Chemistry, since 2000.
- 5. PG, Bangalore University, Chemistry, since 2000.
- 6. PG, Bangalore University, Forensic Science, since 2000.

- 7. PG, University of Mysore, Mysuru, Sugar technology, since 2019.
- 8. PG, Kuvempu University, Chemistry, since 2019.
- 9. PG, University of Mysore, Mysuru, Chemistry, since 2019.
- 10. PG, University of Mysore, Mysuru, Organic Chemistry, since 2019.
- 11. UG, Government college for women(autonomous), Mandya, Chemstry, since 2019
- 12. UG, Maharani's Science College for women (Autonomous), Mysuru, since 2019.
- 13. PG and UG, Davangere University, Tholahunase, since 2018.
- 14. SBRR Mahajana Post graduate Centre (Autonomous), Mysuru, since 2019.
- 15. KSOU, Mysuru, since 2019.
- 16. UG, St. Philominas College (Autonomous), Mysuru (2017 18), 2020 2022.
- 17. UG, JSS College of Arts, Commerce and Science (Autonomous), Mysuru (2011 2013 and 2013 15).
- 18. PG, JSS College for Women (Autonomous), Mysuru (2014 16).
- 19. PG, Geographical Information Systems, University of Mysore, Mysure (2015 2018).

### **Member BOE**

- 1. Member, Mangalore University, Mangalagangotri, Chemistry, 2021.
- Member, Bangalore Central University, Central College Campus, Bangalore, Chemistry, 2019-20.
- 3. Member, Bangalore University, Jnana Bharithi, Bangalore, Forensic Science, 2019-20.
- 4. Member, Bangalore University, Jnana Bharithi, Bangalore, Chemistry, 2019-20.
- 5. Member, Tumkur University, Tumkur, Chemistry, 2019-20.
- 6. Member, Bangalore Central University, Bangalore, Chemistry, 2018-19
- 7. Member, Bangalore University, Bangalore, Chemistry, 2018-19.
- 8. Member, Kuvempu University, Shankaraghatta, Chemistry, 2019.
- 9. Member, University of Mysore, Mysuru, Chemistry, 2019-20.
- 10. Member, JSS College, BN Road, Mysuru, Chemistry, 2017-18.
- 11. Member, Davangere University, Shivagangotri, Chemistry, 2017-18.
- 12. Member, Mangalore University, Mangalagangotri, Industrial Chemistry, 2017.
- 13. Member, Kuvempu University, Shankaraghatta, Shimoga district, Chemistry, and Industrial Chemistry 2017.
- 14. Chairman, BOE in Chemistry (PG), University of Mysore, Mysuru, 2016.
- 15. Member, Mangalore University, Mangalagangotri, Chemistry, 2016.
- 16. Member, Kuvempu University, Shankaraghatta, Shimoga district, Chemistry, 2016.

- 17. Member, Davangere University, Davangere, 2015.
- 18. Member, University of Mysore, Chemistry (2012 and 2014); Organic Chemistry (2009, 2010, 2012 and 2015).
- 19. Member, Karnatak University, Dharwad (2010, 2012 and 2013).
- 20. Member, Kuvempu University, Shankaraghatta, Shimoga district, Chemistry (2012 and 2014); Industrial Chemistry (2013).
- 21. Member, Tumkur University, Tumkur (2010, 2011, 2012 and 2013, 2016).
- 22. Member, Vijayanagara Sri Krishnadevaraja University, Bellary (2013, 2014, 2015).
- 23. Member, Rani Channamma University, Belagavi (2014).
- 24. Member, Karnataka State Open University, Mysore (2014).
- 25. Member, Sahyadri Science College (Constituent College of Kuvempu University), Shimoga (2011 and 2013).
- 26. Member, Yuvaraja College (Constituent College of University of Mysore), Mysore (2010 and 2011, 2016).

### **MEMBER**

# Task force for the implementation of NEP - 2020 in the University of Mysore

### **CONFERENCE / SYMPOSIA ORGANIZED**

- 1. Organizing Committee Member 12<sup>th</sup> Indian Council of Chemists, December 22-24, 2002.
- 2. Organizing Committee Member National Symposium on Bioorganic and Medicinal Chemistry, 2005.
- 3. Organizing Committee Member National Conference on Emerging areas in Chemistry (NACEAC-2009), July 31 Aug 1, 2009.
- 4. Organizing Committee Member New Advances and Opportunities in Biomedical Imaging and Material Science, 26-4-2010.
- 5. Organizing Committee Member Five day Indian Science Congress held at the University of Mysore, Mysore from January 03-07, 2016.
- 6. Organizing Committee Member Three day National Conference on Pure and Applied Chemistry (NACOPAC-2014) held at the Department of Studies in Chemistry, University of Mysore, from December 29 31, 2014.
- 7. Treasurer and Organizing Committee member Recent Innovations in Medicinal and Material Chemistry (RIIMMC 2019) held at the Department of Studies in Chemistry, Manasagangotri, Mysuru 06 on 8<sup>th</sup> and 9<sup>th</sup> March 2019.

8. Organizing Committee Member - Advanced Functional Materials for Energy, Environment and Health Care (AFMEEHC) held at Centre for Material Science and Technology, University of Mysore, Manasagangotri, Mysuru from March 18 – 20, 2019.

# Ph. D. THESIS ADJUDICATED

- 1. Visvesvaraya Techonological University, Jnana Sangama, Belagavi
- 2. Kuvempu University, Shankaraghatta, Shimoga district, Karnataka.
- 3. Gulbarga University, Gulbarga, Karnataka.
- 4. Sri Venkateshwara University, Tirupati, Andrapradesh.
- 5. Shivaji University, Kolhapur, Maharashtra.
- 6. Bharathidasan University, Tamil Nadu.
- 7. Manonmanian Sundarnar University, Tirunelveli, Tamil Nadu.
- 8. Osmania University, Hyderbad, Telangana.
- 9. Tumkur University, Tumkur.
- 10. Vijayanagara Sri Krishnadevaraya University, Ballary.
- 11. Karnatak University, Dharwad
- 12. Panjab University, Chandigarh

### **INVITED LECTURES**

- 1. Invited lecture on "Problems in chemical kinetics and thermodynamics" under the auspices of CSIR/NET special coaching classes held in the department of Chemistry, Karnatak University, Dharwad, on 4th March 2011.
- Invited lecture in Two days faculty development program on "Recent trends on Engineering Chemistry" held at the department of chemistry, Vidya Vikas Institute of Engineering, Mysore, on 15th October 2011.
- 3. Invited lecture on "Metallic corrosion and its control by eco-friendly inhibitors" in one day National seminar on Role of Chemistry in Monitoring the Environment held at the department of chemistry, Sri Venkateshwara University, Tirupati, A. P., on 31st October 2011.
- 4. Delivered invited lecture on "Corrosion of metals and its control by inhibitors" in two days National seminar on Recent Developments in Electro-analytical Techniques (RDET 2012) held at the department of chemistry, Sri Krishnadevaraya University, Ananthapur, A. P., on 6th October 2012.
- 5. Delivered invited talk on "Application of corrosion inhibitors" at the Postgraduate department of chemistry, Maharani's Science College for women, Mysore, as part of the chemical society activities, on 23<sup>rd</sup> November 2012.
- 6. Delivered special lecture for the participants of 6<sup>th</sup> Refresher course in material science organised by the UGC-academic staff college, University of Mysore, Mysore, on 13<sup>th</sup> December 2012.

- 7. Delivered invited lecture on "Principles of rotation and vibration spectroscopy" in two days state level seminar on Basics of spectroscopy held at JSS Banashankari Arts, Commerce and S. K. Gubbi Science college, Dharwad, on 9th March 2013.
- 8. Invited lecture in Two day work shop on "Advances in Material research" organised by the Department of chemistry, Nitte Meenakshi Institute of Technology, Bangalore, on 24th October 2013.
- 9. Delivered special lecture for the participants of 7<sup>th</sup> Refresher course in material science organised by the UGC-academic staff college, University of Mysore, Mysore, on 25<sup>th</sup> October 2013.
- 10. Invited lecture on "Recent developments in corrosion control of metals" held at the post graduate department of chemistry, JSS College of Arts, Commerce and Science, Mysore, on 4th April 2014.
- 11. Delivered special lecture in the department of chemistry, National Institute of Engineering, Mysore under TEQUIP-II program, on 1st March 2014.
- 12. Delivered special lecture on "Recent methods of preventing corrosion" in the department of chemistry, Teresian College, Mysore on 16<sup>th</sup> September 2014.
- 13. Delivered special lecture for the participants of 8<sup>th</sup> Refresher course in material science organised by the UGC-academic staff college, University of Mysore, Mysore, on 31<sup>th</sup> October 2014.
- 14. Delivered special lecture at Shri Dharmastala Manjunatheshwara Girls PU College, Mysore, on 14th November 2014.
- 15. Delivered special lecture in the Post graduate department of Chemistry, Maharanis Science College, Mysore, on 27th November, 2014.
- 16. Delivered special lecture for the participants of 9<sup>th</sup> Refresher course in material sciences organised by the UGC-academic staff college, University of Mysore, Mysore, on 27<sup>th</sup> February 2016.
- 17. Delivered special lecture for the participants of 14<sup>th</sup> Refresher course in Chemistry organised by the UGC-academic staff college, University of Mysore, Mysore, on 07<sup>th</sup> February 2018.
- 18. Delivered special lecture for the participants of 10<sup>th</sup> Refresher course in Materials Science organised by the UGC-academic staff college, University of Mysore, Mysore, on 24<sup>th</sup> March 2019.
- 19. Invited lecture in one-day work shop on "Emerging Trends in Electrochemistry" organised by Bharathi College, UG, PG and Research Centre, Bharathinagar, Mandya District, on 12<sup>th</sup> December 2019.
- 20. Delivered special lecture for the participants of 11<sup>th</sup> Refresher course in Materials Science organised by the UGC-Human resource development centre, University of Mysore, Mysore, on 12<sup>th</sup> and 17<sup>th</sup> February 2020.
- 21. Invited lecture on "Metallic corrosion and graphene based anti-corrosion coating materials" in National webinar organized by the department of chemistry, Vidyavardaka College of Engineering, Mysure on 17<sup>th</sup> July 2020.

22. Delivered special lecture for the participants of 12<sup>th</sup> Refresher course in Materials Science organised by the UGC- Human resource development centre, University of Mysore, Mysore, on 11<sup>th</sup> and 14<sup>th</sup> December 2020.

# DISSERTATIONS SUPERVISED FOR M. Sc. PROGRAMME

Guided more than 100 M. Sc. Students for their dissertation work

#### **PATENT**

Title: "Novel study on surface dynamics with passivation as an isotherm on metal surface – theoretical and experimental approach" by protection of metal centre"

Patent Number: NL-008-EP/2008

Year and Country: 2008, Netherlands

### **BOOK AUTHORED**

Advanced Physical Chemistry Experiments - Volume - I and II

### LIST OF RESEARCH PUBLICATIONS

- 1. Solution combustion synthesis of rGO-Fe<sub>2</sub>O<sub>3</sub> hybrid nanofiller for linseed oil based eco-friendly anticorrosion coating, Mahesh Bhaskar Hegde, **K. N. Mohana**, Saurav Ramesh Nayak, K. Rajitha and A. M. Madhusudhana, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 2021.
- 2. Reduced Graphene Oxide-Epoxidized Linseed Oil Nanocomposite: A Highly Efficient Bio-based Anti-Corrosion Coating material for Mild Steel, Mahesh Bhaskar Hegde, **K. N. Mohana**, Saurav Ramesh Nayak, K. Rajitha and A. M. Madhusudhana, *Progress in Organic Coatings*, (2021) **159**,106399.
- 3. Fabrication of Reduced Graphene Oxide/Ruthenium Oxide Modified Graphite Electrode for Voltammetric Determination of Tryptophan, Mahesh Bhaskar Hegde, **K. N. Mohana**, A. M. and M. M. Vinay, Y. Arthoba Nayaka and, N. Kumara Swamy, *Graphene and 2D Materials Technology*, https://doi.org/10.1007/s41127-021-00042-8, (2021).
- 4. Fabrication of graphene nanoribbon-based enzyme-free electrochemical sensor for the sensitive and selective analysis of rutin in tablets, N. Kumara Swamy, **K. N. Mohana**, Mahesh Bhaskar Hegde, A. M. Madhusudana, K. Rajitha and Saurav Ramesh Nayak, *J. Applied Electrochemistry*, (2021) **51**, 1047–1057.
- Effect of OH, NH<sub>2</sub> and OCH<sub>3</sub> groups on the corrosion inhibition efficacy of three new 2,4,5-trisubstituted imidazole derivatives on mild steel in acidic solutions: Experimental, surface and DFT explorations, M. K. Prashanth, C. B. Pradeep Kumar, B. S. Prathibha, M. S. Raghu, K. Yogesh Kumar, M. B. Jagadeesha, K. N. Mohana, Honnur Krishna, *Journal of Molecular Liquids*, (2021) 329, 115587.

- 6. Functionalized multi-walled carbon nanotube/polyindole incorporated epoxy: An effective anti-corrosion coating material for mild steel, Saurav Ramesh Nayak, **K. N. Mohana**, Mahesh Bhaskar Hegde, K. Rajitha, A. M. Madhusudhana, S. R Naik, *Journal of Alloys and Compounds*, (2020) **856**, 158057.
- 7. Fabrication of ZnO/rGO and ZnO/MWCNT nanohybrids to reinforce the anticorrosion performance of polyurethane coating, K. Rajitha, **K. N. Mohana**, Mahesh Bhaskar Hegde, Saurav Ramesh Nayak, Ningappa Kumara Swamy, *FlatChem*, (2020) **24**, 100208.
- 8. Development of Al<sub>2</sub>O<sub>3</sub>.ZnO/GO-phenolic formaldehyde amine derivative nanocomposite: A new hybrid anticorrosion coating material for mild steel, A. M. Madhusudhana, **K. N. Mohana**, Mahesh Bhaskar Hegde, Saurav Ramesh Nayak, Kamalon Rajitha and N. Kumara Swamy, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, (2020) **601**,125036.
- 9. Fluorine Substituted Thiomethyl Pyrimidine Derivatives as Efficient Inhibitors for Mild Steel Corrosion in Hydrochloric Acid Solution: Thermodynamic, Electrochemical and DFT Studies, C.B. Pradeep Kumar, **K. N. Mohana**, M.S. Raghu, M.B. Jagadeesha, M.K. Prashanth, N.K. Lokanath and Mahesha, *Journal of Molecular Liquids*, (2020) **311**, 113311.
- 10. Synthesis of graphene oxide-based nanofillers and their influence on the anticorrosion performance of epoxy coating in saline medium, K. Rajitha and K. N. Mohana, *Diamond and Related Materials*, **108** (2020) 107974.
- 11. Functionalized graphene oxide-epoxy phenolic novolac nanocomposite: An efficient anticorrosion coating on mild steel in saline medium, A. M. Madhusudhana, **K. N. Mohana**, Mahesh Bhaskar Hegde, Saurav Ramesh Nayak, Kamalon Rajitha and N. Kumara Swamy, *Advanced Composites and Hybrid Materials*, (2020) **3(2)**, 141–155.
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- 13. A sustainable and eco-friendly polymer based graphene oxide nanocomposite anti-corrosion coating on mild steel, Mahesh Bhaskar Hegde, **K. N. Mohana**, *ChemistrySelect*, (2020), **5(4)**, 1506-1515.
- 14. Evaluation of anti-corrosion performance of modified gelatin-graphene oxide nanocomposite dispersed in epoxy coating on mild steel in saline media, K. Rajitha, **K. N. Mohana**, A. Mohanan and A. M. Madhusudhana, *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, (2020), **587**, 124341.
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- 34. *In Vitro* Antioxidant Activity of 1-[5-(4-Methoxy-phenyl)-[1,3,4]oxadiazol-2-yl]-piperazine Derivatives, L. Mallesha, K. P. Harish, **K. N. Mohana** and N. D. Rekha, *Canadian Chemical Transactions*, (2014) **2(4)**, 518-525.
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