Applied Science Dept

Chemistry

Nandini V. Iyer

Mrs. Nandini Venkat Iyer

Nandini Iyer is a Post Graduate in Biochemistry from University of Mumbai with 20 years of teaching experience in the field of Chemistry. She joined COEP in 2001. She is also a graduate in Education from S.N.D.T University. She is currently pursuing her Doctoral Studies from Symbiosis International University. Nandini is a recipient of the COEP STAR AWARD of 2013 for the BEST Teacher of COEP. She has organized workshops and faculty development programmes for faculty and students. She is also actively involved as a faculty advisor in extra-curricular and co-curricular activities associated with various clubs in COEP. Her areas of interest are Conducting Polymers, Environmental Chemistry and Material Science.

Designation:

Assistant Professor of Chemistry
Department:

Applied Science
Email:

nvi.appsci@coep.ac.in
hod.appsci@coep.ac.in
Phone Number:

+91 02025507101
Website:

www.coep.org.in

Date of Joining COEP:

02/01/2008
Prior to joining COEP Industrial Experience (Years):

0
Prior to joining COEP Teaching/Research Experience:

6
Teaching Experience:

28

Research Experience:

6

Qualifications:

M.Sc,B.Ed.

EDUCATION

- B.Sc., 1992, University of Mumbai
- M.Sc.., 1994, University of Mumbai
- B.Ed.,2007.S.N.D.T University
- (Pursuing Ph.D., Symbiosis International University)

Teaching Responsibility:

- Applied Chemistry (F.Y.B.Tech)
- Analytical Instrumentation and Laboratory techniques (S.Y.B.Tech-Elective)
- Lubrication Technology(B. Tech-Elective)

Additional Responsibility:

Center Administrator COEP's Counselling Centre 'Mitr'

F.Y.BTECH Coordinator

Faculty Coordinator-MBA Program

Chairman of Departmental Program Assessment and Quality Improvement Committee

Overall Coordinator -Student Induction Programme(AICTE's Model Curriculum)

Overall Coordinator-Wadhwani Foundation Employability Skills

Faculty member of Gymkhana managing committee
Faculty Incharge - Production and Infrastructure, Cultural festival: *Impressions*
Faculty Advisor-Abhijaat Newsletter

Publications:

1) Nandini .V. Iyer, J.A.Kher, M.Y.Khaladkar. Electrical Conductivity Of Binary Lanthanum Cuprates. Journal International Journal of Innovative Research in Science, Engineering and Technology 2 (8) 2013.
2) Presented a paper in National Conference "WE Meet'2010" on the topic, Challenges faced by women in pursuing their Doctoral studies and won the first position

3) Participated and Presented a paper in the International Symposium On Materials Education, ISME-2011.

4) Sangeetha Hanumant Ghamande, Nandini. V. Iyer, M. Y. Khaladkar, G. L. Agawane & J. A. Kher, Effects of Temperature on Hydrocarbon Fractions Obtained by Catalytic Pyrolysis of Low Density Polyethylene, International Journal of Advanced Science and Technology Vol. 28, No. 19, (2019), pp. 1291- 1297. The ISSN 22076360, 20054238. Publisher: Science and Engineering Research.

5) M Ghamande, GL Agawane, Nandini V Iyer, JA Kher, Effect of temperature on HDPE prepared by Catalytic Pyrolysis, FTIR analysis, and its applications, International Journal of Advanced Science and Technology Vol. 28, No. 13, (2019), pp. 954-960. The ISSN 22076360, 20054238. Publisher: Science and Engineering Research.

6) SH Ghamande, Nandini V Iyer, MY Khaladkar, GL Agawane, JA Kher, Effects of Temperature on Hydrocarbon Fractions Obtained by Catalytic Pyrolysis of Low-Density Polyethylene, International Journal of Advanced Science and Technology Vol. 28, No. 19, (2019), pp. 1291- 1297. The ISSN 22076360, 20054238. Publisher: Science and Engineering Research.

7) SH Deshpande, GL Agawane, Nandini V Iyer, JA Kher, Zeolite and Aluminium catalytic thermolysis of HDPE: A study on the effect of temperature, International Journal of Advanced Science and Technology Vol. 29, No. 07, (2020), pp. 3664-3669. The ISSN 22076360, 20054238. Publisher: Science and Engineering Research.

- Projects Carried out: 02 (ongoing)
- Patents (Filed & Granted): 02
- Technology Transfer: --
- Research Publications (No. of papers published in National/International Journals/Conferences): 07
- No. of Books published with details (Name of the book, Publisher with ISBN, year of publication, etc.): 02, Textbook of Engineering Chemistry, Nirali Prakashan.

Memberships and Affiliations:

1. Life Membership of The Society for Advancement of Electrochemical Science and Technology
2. ISTE Life Member

Current Projects :

Conducting Polymers ,Environmental Chemistry, Material Science.

Other:

1. Recipient of COEP Star award for 'The Best Faculty" which was awarded in 2013.
2. Provide strategic support to the various activities carried out under 'Mitr',COEP Wellness Centre.
3. Initiated the COEP Cultural Festival "Impressions" in 2016 and was the Faculty Advisor till 2018-19. Invited and interacted with celebrities like Vikram Gokhale, Sachin Khedkar, Krishna Kumar(KK), and Sumit Raghavan.This activity helped in the overall development of students.
4. Organising committee member of National Conferences hosted by Applied Science Department, National Conference of Materials for Electronic Applications, and National Conference of Bioengineering and Biosciences.
5. Subject Coordinator of Chemistry and have been a part of curriculum revision which takes place every four years.
6. Organised FDPs for faculty members.
7. Organise meditation activities for students in collaboration with Heartfulness.
8. Organised Student Excellence and Learning Program by Art of Living, in association with NPIU.
9. Organise an ongoing activity for MBA and other students, the DEEP C TALKS by CXOs(CEOs, CMOs,COOs,CTOs).
10. Was Faculty Advisor -Cultural for 12 years and initiated many activities with the support of the students.
11. Was a part of the FYBtech Admission committee.
12. Pursuing my doctoral studies at Symbiosis Institute of Technology,Symbiosis International University.

Areas of Research, Testing & Consultancy:

- Conducting Polymers
- Hybrid Nanocomposites
- Nanotechnology
- Polymers
- Sustainable development

Dr. Kavita Shirish Suranje

Area of Research:

- Synthesis and study of Pyrazolines and Pyrazoles
- Development of Direct Inkjet Printed Flexible Electronic Circuits and Chemical Sensors.
- Corrosion and Wear Behaviour of Biomaterials in Simulated Body Fluids
- Non-conventional energy materials and devices.

Designation:

Assistant Professor

Department:

Applied Science

Email:

knj.appsci@coep.ac.in

Phone Number:

+91 20 25507036

Website:

www.coep.org.in

Teaching Experience:

12

Research Experience:

3

Qualifications:

Ph.D. (Organic Chemistry), M.Sc, B.Ed.

Teaching Responsibility:

- F.Y.B.Tech Applied Chemistry
- F.Y.B.Tech. Applied Chemistry Laboratory
- Environmental Awareness

Additional Responsibility:

1. Faculty advisor for FYBTech.
2. Faculty Advisor for National Service Scheme

3. Faculty Advisor for Gymkhana (Chess club)
4. Member of Library committee
5. Faculty Advisor for Mind Spark Dextrus Lab
6. Faculty Advisor for ZEST (COEP Annual Sports Event)
7. First year Admission Committee
8. First year Student induction programme.
9. Institute committee member for Collpoll and NAAC.
10. Departmental Time Table In-charge

Publications:

1. **Published a research paper** in **International Journal** of Innovative Research in Science, Engineering and technology **(IJERSET), Volume 3, Issue6, June2014**. Title:"Development of Bipolar Plates Using Expanded Graphite as a Raw Material".
2. **Published a research paper** in **International Journal** of Innovative Research in Science, Engineering and Technology **(IJERSET), Volume 3, Issue6, June 2014.** Title: "Preparation C-Carbon Composite Using Natural Graphite and Novolac Resin".
3. **National Conference** on Materials for Electronic Applications (NCMEA-14) on 30, 31 January &1 February, 2014**,** College of Engineering Pune. Topic: "Development of Bipolar Plates Using Expanded Graphite as Raw Material"
4. **National Conference** on Materials for Electronic Applications (NCMEA-14) on 30, 31 January &1 February, 2014**,** College of Engineering Pune. Topic: "Preparation Carbon-Carbon composite using natural graphite and novolac phenolic resin".
5. DST Sponsored **National Conference** on "Bioengineering Sciences: Present Status and Future Perspectives" (NCBES-13) held on 15th and 16th March, 2013.Topic: "Use of algae as biofuel sources: an overview".
6. **National Conference** on Energy and Sustainable Development on 28-29 Feb. 2012, College of Engineering Pune. Awarded the **Best Poster** of the Conference. Topic "Hydrogen and Fuel Cells: A Sustainable Energy for Future".
7. **UGC Sponsored National Conference** on Advanced Material and Technology (NCAMT-09) Dec. 29th-30th, 2009 at Department of Chemistry S.S.E.S AMT's Science College, Nagpur. Topic: "Antimicrobial studies of 3,5-Diaryl4Aroyl-1-Benzoyl Pyrazoles".
8. **CSIR Sponsored National Conference** on Recent Advances in Chemical Research (NCRACR-2009), Feb 6-7, 2009 Department of Chemistry, University College of Science, Osmania University, Hyderabad. Topic: "A contribution in synthesis of Antimicrobial Study of 3, 5-Diaryl4Aroyl-1-Benzoyl Pyrazoles.
9. **Souvenier Cum Abstracts Published**: Synthesis and Characterization of 3, 5-Diaryl-4-Aroyl-1-Benzoyl Pyrazoles. UGC Sponsored Regional Seminar on Recent Trends in Heterocyclic Compounds in Chemical, Medicinal and Pharmaceutical, Sciences. 2nd March, 2008, M.F.M. Warud, Dist. Amravati.
10. **Asian Journal of Chemistry**Δ: An International Quarterly Research Journal of Chemistry. Synthesis of 3, 5 DiaryL-4-AroyL-1-Benzoyl-^{2}-Pyrazolines. Vol. 15, No.2, 2003.

Memberships and Affiliations:

1. Life Member of The society for Advancement of Electrochemical Science and Technology (SAEST), India
2. Life member of The Indian Society for Technical Education (ISTE)

Current Projects :

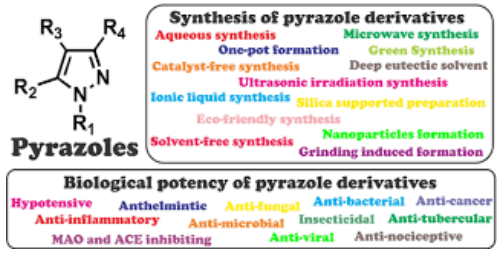
Co-Investigator for “Development of direct Inkjet Flexible Electronic Circuits and Chemical Sensors” (Completed)

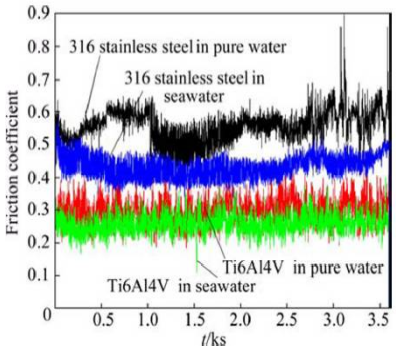
Other:

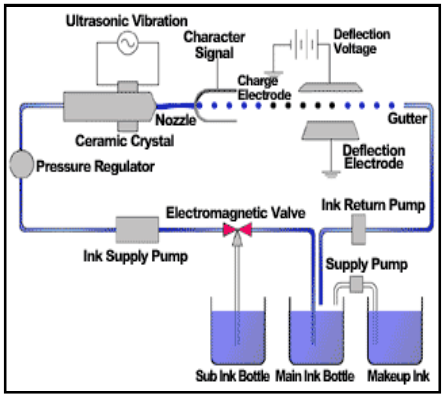
- Co-Investigator : Development of Direct Inkjet Printed Flexible Electronic Circuits and Chemical Sensor.(minor project under DIC, COEP)
- Co-Investigator : Corrosion and Wear Behaviour of Biomaterials in Simulated Body Fluids.(Interdisciplinary minor project funded by COEP)

Areas of Research, Testing & Consultancy:

- Synthesis and study of Pyrazolines and Pyrazoles
- Development of Direct Inkjet Printed Flexible Electronic Circuits and Chemical Sensors.
- Corrosion and Wear Behaviour of Biomaterials in Simulated Body Fluids
- Non-conventional energy materials and devices







Name: Mrs. Shubhangi B. Karadkar

Designation: Assistant Professor in Chemistry

Department: Applied Sciences

Email: sbk.appsci@coep.ac.in

Contact Number: 6260428652

Website: (Optional)

Qualifications: M Sc.

Teaching Experience: 16 years

Industrial Experience: 0 years

Research Experience: 0 years

Area of Research: Synthesis and characterization of nanomaterials (Ferrites)

Courses Taught: Applied Chemistry

Responsibilities shouldered: (Central portfolios: past and present)

CollPoll Commite member.

Reviewer for Journals: Organic and Biomolecular Chemistry, Industrial and Engineering Research

Awards / honors received: N/A

Number of PhD/ M.Tech/ B.Tech students guided : 0

Research Project & Publication Details :

1. Published a research paper in GIS Science Journal Volume 9, issue 4 2022
   Title-“Synthesis and Characterization of SnO2 Nanoparticles by Coprecipitation Method”. By M. S. Phalak, Y. R. Toda & S. B. Karadkar.

Dr.Ganesh Agawane:

Name: Dr. G.L. Agawane

Designation: Assistant Professor of Chemistry

Department: Applied Science

Email: gla.appsci@coep.ac.in

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User ID: gla.appsci@coep.ac.in

Teaching Experience: 2

Research Experience: 7

Qualifications:
M.Sc. (Chemistry), PhD (Materials Science & Engineering), Postdoctorate (Laser Physics)

Research interests: Nanotechnology, Solar Cells, Green Chemistry, Material Science, Laser Physics, Optical Telecommunication.

Teaching Responsibility: F.Y.B.Tech.Applied Chemistry, Applied Chemistry Laboratory

Additional Responsibility: Co-teacher for T.Y.B.Tech. Finance for Engineers

Selected Publications:

1. Preparation of $Cu_2(Zn_{1-x}Mg_x)SnS_4$ thin films by pulsed laser deposition technique for solar cell applications, G.L. Agawane, S.A. Vanalakar, A.S. Kamble, A.V. Moholkar, J.H. Kim, (2018) Materials Science and Semiconductor Processing, 76, 50-54
2. Spectroscopic properties of Er^{3+}/Yb^{3+} co-doped fluorophosphate glasses for NIR luminescence and optical temperature sensor applications, K. Linganna, G.L. Agawane,J.H. In, J. Park, J.H. Choi, (2018) Journal of Industrial and Engineering Chemistry, 67, 236-243
3. Spectroscopic properties of Er3+/Yb3+ co-doped fluorophosphate glasses for optical device applications,K. Linganna, G.L. Agawane, J.H. In, J. Park, J.H. Choi, Photonic Fiber and Crystal Devices: Advances in Materials and Innovations in Device Applications XII (2018), International Society for Optics and Photonics, SPIE Optical Engineering + Applications, San Diego, California, United States. DOI: 10.1117/12.2320420

4. The green hydrothermal synthesis of nanostructured $Cu_2ZnSnSe_4$ as solar cell material and study of their structural, optical and morphological properties, S.A. Vanalakar, G.L.Agawane,A.S. Kamble, P.S. Patil, J.H. Kim, (2017) Applied Physics A, 123, 782
5. Thermo-Mechanical studies on Er^{3+}-doped fluorophosphate glasses for near infrared lasers, G.L. Agawane, K. Linganna, J.H. In, J. Park, J.H. Choi, (2017) Ceramics International, 43, 11177-11181
6. Longer lifetime of Er^{3+}/Yb^{3+} co-doped fluorophosphate glasses for optical amplifier applications, K. Linganna, G.L. Agawane, J.H. Choi, (2017) Journal of Non-Crystalline Solids, 471, 65-71
7. Sulfur ion concentration dependent morphological evolution of CdS thin films and its subsequent effect on photo-electrochemical performance, A. Kamble, B. Sinha,G.L. Agawane,S.A. Vanalakar, I.Y.Kim, J.Y. Kim, S.S. Kale, P. Patil, J.H. Kim, (2016) Physical Chemistry Chemical Physics, 18, 28024-28032
8. Influence of laser repetition rate on the $Cu_2ZnSn(SSe)_4$ thin films synthesized via pulsed laser deposition technique, S.A. Vanalakar, S.S. Mali, G.L. Agawane, A.S. Kamble, I.Y. Kim,P.S. Patil, J.Y. Kim, J.H. Kim, (2016) Solar Energy Materials and Solar Cells, 157, 331-336
9. Cu_2ZnSnS_4 solar cells with a single-time spin-coated absorber layer prepared via a simple sol-gel route, N.K. Youn, G.L. Agawane, D.H. Nam, S.W. Shin, J.Gwak, S.W. Shin, J.H. Kim, K.Y. Yoon, (2016) International Journal of Energy Research, 40, 662-669
10. Synthesis of fast response, highly sensitive and selective Ni:ZnO based NO_2 sensor, V.V. Ganbavle, S.I. Inamdar, G.L. Agawane, J.H. Kim, K.Y. Rajpure, (2016) Chemical Engineering Journal, 286, 36-47
11. Fabrication of 3.01% power conversion efficient high-quality CZTS thin film solar cells by a green and simple sol-gel technique, G.L. Agawane, A.S. Kamble, S.A. Vanalakar, S.W. Shin, M.G. Gang, J.H. Yun, J.H. Gwak, A.V. Moholkar, J.H. Kim, (2015) Materials Letters, 158, 58-61
12. Fabrication of Cu_2SnS_3 thin film solar cells using the pulsed laser deposition technique, S.A. Vanalakar, G.L. Agawane, A.S. Kamble, C.W. Hong, P.S. Patil, J.H. Kim, (2015) Solar Energy Materials and Solar Cells, 138, 1-8
13. Nitrogen dioxide sensing properties of sprayed tungsten oxide thin film sensor: Effect of film thickness, V.V. Ganbavle,S.V. Mohite, G.L. Agawane, J.H. Kim, K.Y. Rajpure, (2015) Journal of Colloid and Interface Science, 451, 245-254
14. Synthesis of simple, low cost and benign sol-gel Cu_2ZnSnS_4 thin films: influence of different annealing atmospheres, G.L. Agawane, S.W. Shin, S.A. Vanalakar, M.P. Suryawanshi, A.V. Moholkar, J.H. Yun, J. Gwak,J.H. Kim, (2015) Journal of Materials Science: Materials in Electronics, 26, 1900-1907
15. A review on pulsed laser deposited CZTS thin films for solar cell applications, S.A. Vanalakar, G.L. Agawane, S.W. Shin, M.P. Suryawanshi, K.V. Gurav, K.S. Jeon, P.S. Patil, C.W. Jeong, J.Y. Kim, J.H. Kim, (2015) Journal of Alloys and Compounds, 619, 109-121
16. Investigations on Chemo-Mechano Stabilities of the Molybdenum Thin Films Deposited by DC-Sputter Technique, G.L. Agawane, S.W. Shin, S.A. Vanalakar, M.P. Suryawanshi, A.V. Moholkar, J.H. Kim, (2015) ZeitschriftfürPhysikalischeChemie (ZPC), 229, 377-393

17. Non-vacuum mechanochemical route to the synthesis of Cu_2SnS_3 nano-ink for solar cell applications, S.A. Vanalakar, G.L. Agawane, S.W. Shin, H.S. Yang, P.S. Patil, J.Y. Kim, J.H. Kim, (2015) ActaMaterialia, 85, 314-321
18. Next generation promising $Cu_2(Zn_xFe_{1-x})SnS_4$ photovoltaic absorber material prepared by pulsed laser deposition technique, G.L. Agawane, S.W. Shin, S.A. Vanalakar, A.V. Moholkar, J.H. Kim, (2014) Materials Letters, 137, 147-149
19. Novel reduced toxic route synthesis and characterization of chemical bath deposited ZnSe thin films, G.L. Agawane, S.W. Shin, M.P. Suryawanshi, K.V. Gurav, A.V. Moholkar, J.Y. Lee, P.S. Patil, J.H. Yun, J.H. Kim, (2014) Ceramics International, 40, 367-374
20. Gas sensing properties of hydrothermally grown ZnO nanorods with different aspect ratios, K.V. Gurav, M.G. Gang, S.W. Shin, U.m. Patil, P.R. Deshmukh, G.L. Agawane, M.P. Suryawanshi, S.M. Pawar,P.S. Patil, C.D. Lokhande, J.H. Kim, (2014) Sensors and Actuators, B: Chemical, 190, 439-445
21. Fabrication of 5.2% efficient $Cu_2ZnSn(S,Se)_4$ solar cells using DC-sputtered metal precursors followed by sulfo-selenization, H.S. Yang, G.L. Agawane, S.W. Shin, S.A. Vanalakar, W.L. Jung, J.H. Kim, (2015) Physica Status Solidi C, 12, 708-712. 19th International Conference on Ternary and Multinary Compounds (ICTMC-19), Niigata, Japan, Sept. 1-5, 2014
22. Non-toxic novel route synthesis and characterization of nanocrystalline ZnS_xSe_{1-x} thin films with tunable band gap characteristics, G.L. Agawane, S.W. Shin, S.A. Vanalakar, A.V. Moholkar, K.V. Gurav, M.P. Suryawanshi, J.Y. Lee, J.H. Yun, J.H. Kim, (2014) Materials Research Bulletin, 55, 106-113
23. Studies on the controlling of the microstructural and morphological properties of Al doped ZnO thin films prepared by hydrothermal method, M.G. Gang, S.W. Shin, K.V. Gurav, Y. Wang,G.L. Agawane, J.Y. Lee, J.H. Moon, J.H. Kim, (2013) Japanese Journal of Applied Physics, 52, Art. No. 10MA06-1-10MA06-5
24. Green route fast synthesis and characterization of chemical bath deposited nanocrystalline ZnS buffer layers, G.L. Agawane, S.W. Shin, M.S. Ki, M.P. Suryawanshi, K.V. Gurav, A.V. Moholkar, J.Y. Lee, J.H. Yun, P.S. Patil, J.H. Kim, (2013) Current Applied Physics, 13, 850-856
25. CZTS based thin film solar cells: A status review, M.P. Suryawanshi, G.L. Agawane, S.M. Bhosale, S.W. Shin, P.S. Patil, J.H. Kim, A.V. Moholkar, (2013) Materials Technology, 28, 98-109
26. Preparation and characterization of chemical bath deposited nanocrystalline ZnSe thin films using Na_3-citrate and hydrazine hydrate: A comparative study, G.L. Agawane, S.W. Shin, M.P. Suryawanshi, K.V. Gurav, A.V. Moholkar, J.Y. Lee, P.S. Patil, J.H. Yun, J.H. Kim, (2013) Materials Letters, 106, 186-189
27. Thickness dependent H_2S sensing properties of nanocrystalline ZnO thin films derived by advanced spray pyrolysis, P.S. Shewale, G.L. Agawane, S.W. Shin, A.V. Moholkar, J.Y. Lee, J.H. Kim, M.D. Uplane, (2013) Sensors and Actuators B: Chemical, 177, 695-702
28. A facile and low cost synthesis of earth abundant element Cu_2ZnSnS_4 (CZTS) nanocrystals: Effect of Cu concentrations, S.W. Shin, J.H. Han, C.Y. Park, S.R. Kim, Y.C. Park, G.L. Agawane, A.V. Moholkar, J.H. Yun, J.H. Jeong, J.Y. Lee, J.H. Kim, (2012) Journal of Alloys and Compounds, 541, 192-197

29. A facile and low-cost synthesis of promising absorber materials on $Cu_2ZnSn(S_x,Se_{1-x})_4$nanocrystals consisting of earth abundant elements with tunable band gap characteristics, S.W. Shin, J.H. Han, Y.C. Park, G.L. Agawane, C.H. Jeong, J.H. Yun, A.V. Moholkar, J.Y. Lee, J.H. Kim, (2012) Journal of Materials Chemistry, 22, 21727-21732
30. Non-toxic complexing agent Tri-sodium citrate's effect on chemical bath deposited ZnS thin films and its growth mechanism, G.L. Agawane, S.W. Shin, A.V. Moholkar, K.V. Gurav, J.H. Yun, J.Y. Lee, J.H. Kim, (2012) Journal of Alloys and Compounds, 535, 53-61.
31. Design and growth of quaternary Mg and Gacodoped ZnO thin films with transparent conductive characteristics, S.W. Shin, I.Y. Kim, G.H. Lee, G.L. Agawane, A.V. Moholkar, G.S. Heo, J.H. Kim, J.Y. Lee, (2011) Crystal Growth and Design, 11, 4819-4824
32. Influence of deposition temperature on morphological, optical, electrical and opto-electrical properties of highly textured nano-crystalline spray deposited CdO:Ga thin films, A.V. Moholkar, G.L. Agawane, K.U. Sim, Y.B. Kwon, K.Y. Rajpure, J.H. Kim, (2010) Applied Surface Science, 257, 93-101
33. Temperature dependent structural, luminescent and XPS studies of CdO:Ga thin films deposited by spray pyrolysis, A.V. Moholkar, G.L. Agawane, K.U. Sim, Y.B. Kwon, D.S. Choi, K.Y. Rajpure, J.H. Kim, (2010) Journal of Alloys and Compounds, 506, 794-799

Memberships and Affiliations:

- Member of the Korean Optoelectronics and Telecommunication Society since 2017, South Korea
- Member of the Korean Ceramic Society since 2016, South Korea
- Member of the Korean Photovoltaic Society since 2012, South Korea
- Associate Editor of Research in Medical and Engineering Sciences (RMES), Crimson Pu blishers, USA
- Editorial Board Member of Journal of Energy, Science Research Association (SCIREA), USA

Current Projects:

- Number of completed research projects: 3
- Total number of international publications: 64
- Most cited & downloaded articles and Invited talks: 15+

Areas of Research, testing and consultancy:

- Thin film solar cells
- Nanotechnology
- Laser glasses, Optics, Ceramics
- Green chemistry, Metallurgy
- Plastics to fuel conversion

Solar Cell Fabrication

Night-vision IR lens

Dr.Chandan Patel:

Designation: Adjunct Faculty of Chemistry

Department: Applied Sciences

Email: patelc.appsci@coep.ac.in

Contact Number: 6260428652

Website: (Optional)

Qualifications: PhD. Ecole Normale Superieure de Lyon (France)

Teaching Experience: 3 years

Industrial Experience: 0 years

Research Experience: 3 years

Area of Research: Computational chemistry, reaction mechanism, catalysis, protein-ligand interactions

Courses Taught:

Responsibilities shouldered: (Central portfolios: past and present)

Member of team responsible for setting up and maintenance of the High Performance Computing Facility (Corona) at Indian Institute of Technology Bombay.

Reviewer for Journals: Organic and Biomolecular Chemistry, Industrial and Engineering Research

Awards / honors received: N/A

Number of PhD/ M.Tech/ B.Tech students guided : 0

Research Project & Publication Details :

1. **Activation mechanism of plasmepsins, pepsin-like aspartic proteases from Plasmodium, follows a unique trans-activation pathway**

   Rathore, I.; Mishra, V.; Patel, C. ; Xiao, H. ; Gustchina, A. ; Wlodawer, A. ; Yada, R. Y. ; Bhaumik, P. The FEBS Journal, *Accepted*, **2020**. DOI :10.1111/febs.15363

2. **Hypercoordinate Iodine catalysts in enantioselective transformations : The role of**

catalyst folding in stereoselectivity

Sreenithya A.; Patel, C.; Hadad, C. M.; Sunoj, R. B. *ACS catal.* **2017**, *7*, 4189.

3. **Mechanism and reactivity in the Morita-Baylis-Hillman reaction : the challenge of accurate computation**

   Liu, Z. ; Patel, C. ; Harvey, J. N. ; Sunoj, R. B. *Phys. Chem. Chem. Phys.* **2017**, *19*, 30647.

4. **Mechanistic Insights and the Origin of Regioselective Borylation in an Iridium-Catalyzed Alkyl C(sp^3)–H Bond Functionalization**

   Patel, C.* ; Abraham, V. ; Sunoj, R. B.* *Organometallics*, **2017**, *36*, 151.

   *Corresponding Authors

5. **Understanding the structural basis of substrate recognition by *Plasmodium falciparum* plasmepsin V to aid in the design of potent inhibitors**

   Bedi, R. K.‡; Patel, C.‡ ; Mishra, V. ; Xiao, H. ; Yada, R. Y. ; Bhaumik, P. *Sci. Rep.* **2016**, *6*, 31420.

   ‡Equal first authors

6. **Structure, dynamics and interactions of a C4′-oxidized abasic site in DNA : a concomitant strand scission reverses affinities**

   Patel, C.; Tomàs, D. ; Lankaš, F. ; Dumont, E. *Biochemistry,* **2013**, *52*, 8115.

7. **Addressing the competitive formation of tandem DNA lesions by a nucleobase peroxyl radical : a DFT-D screening**

   Dupont, C. ; Patel, C.; Ravanat, J. –L. ; Dumont, E. *Org. Biomol. Chem.* **2013**, *11*, 3038.

8. **What Singles Out the G[8–5]C Intrastrand DNA Cross-Link? Mechanistic and Structural Insights from Quantum Mechanics/Molecular Mechanics Simulations**

   Patel, C.; Garrec, J.; Dupont, C.; Dumont, E. *Biochemistry*, **2013**, *52*, 425.

9. **Insights into Intrastrand Cross-Link Lesions of DNA from QM/MM Molecular Dynamics Simulations**

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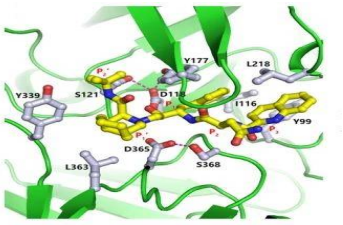
    Roy, D.: Patel, C.; Liebman, J. F.; Sunoj, R. B. *J. Phys. Chem. A*, **2008**, *112*, 8797.

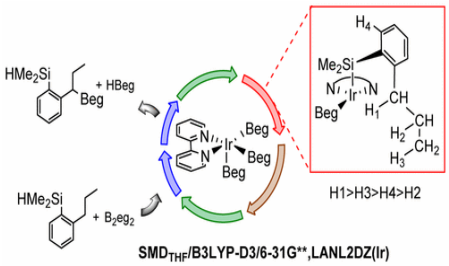
Areas of Research, testing and consultancy:

- Static Quantum Chemical calculations
- Molecular dynamics simulations
- Hybrid QM/MM simulations
- Protein–Ligand interactions
- Regio and Enatio selective catalysis in organic synthesis



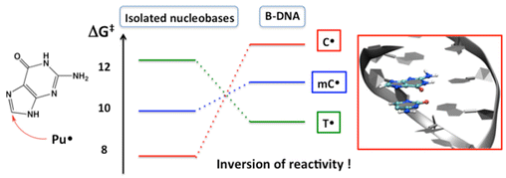
Protein Ligand Interactions

(Quantum Chemical calculations



Chemical Reaction Profiles

(Molecular Dynamics simulations)



Reactions in biological framework

(QM/MM simulations)