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http://www.snu.edu.in/naturalsciences/natural_sciences_chemistry.aspx

RESEARCH INTEREST

1. Synthesis of monomers and polymers sourced from agricultural wastes and their applications.
2. Polymers for electro-optic applications
3. Nanomaterials and their derivatives for
 - a. Device applications (energy storage devices)
 - b. Drug delivery applications
 - c. Antibacterial applications

EDUCATION

- 09/02 –05/06** **D.Phil. in Organic Chemistry, University of Oxford**, Oxford, UK.
Thesis – Synthesis of Polymers for Electro-optic applications.
Project in association with Toppan Printing Company (Japan), Dept. of Materials (Oxford) and St. Andrews (Scotland)
Supervisor: Dr. P.L. Burn.
- 02/05 – 05/05** **Building a Business (Science Entrepreneurship), SAID Business School**,
University of Oxford.
- 07/99 - 12/00** **1st Class M. Tech. in Polymer Science and Technology**, CGPA= 9.293/10
Indian Institute of Technology, Delhi, India. Final Year Project:
Novel Matrix Resins for Composites Based on Hyperbranched Polyesters.
Supervisor – Prof. I. K. Varma.
- 07/97 - 05/99** **1st Class M. Sc. in Chemistry (2nd Rank)**, CGPA= 9.108/10
Indian Institute of Technology, Delhi, India. Final year project:
Bioseparation Strategies for purification of Mushroom Polyphenoloxidase.
Supervisor – Prof. M. N. Gupta.
- 06/94 - 05/97** **1st Class B. Sc. (Hons.) in Chemistry, (1st Rank)**, 78.3%
University of Delhi, Delhi, India.

06/93 - 05/94 **12th Class (Equivalent to A levels)**, 78% (Chemistry 88%, Physics 78%, Maths 81% and Biology 84%), **Central Board of Senior Secondary Education, Delhi**, India.

EMPLOYMENT

TEACHING EXPERIENCE:

07/18 – till date **Associate Professor**, (Undergraduate Advisor since Aug 2019)
Shiv Nadar University, School of Natural Sciences, Dept. of Chemistry

06/12 – 06/18 **Assistant Professor**,
Shiv Nadar University, School of Natural Sciences, Dept. of Chemistry

11/09 – 05/12 **Assistant Professor**,
Ramjas College, Delhi University

07/09 – 12/09 **Guest Faculty**, Indian Institute of Technology, Delhi (IIT, Delhi)

07/08 – 12/08 **Guest Faculty**, Indian Institute of Technology, Delhi (IIT, Delhi)

10/05 – 06/06 **Retained Lecturer**, Wadham College, University of Oxford

10/05 – 06/06 **Tutorial fellow**, Brasenose College, University of Oxford

10/05 – 06/06 **Tutorial fellow**, University College, University of Oxford

07/05 – 07/05 **Teaching Assistant** (*Sutton Trust*), Dyson Perrins Laboratory,
University of Oxford

10/04 – 12/04 **Laboratory Demonstrator**, Dyson Perrins Laboratory, University of Oxford

01/04 – 03/04 **Teaching Assistant**, University College, University of Oxford

10/03 – 12/03 **Laboratory Demonstrator**, Dyson Perrins Laboratory, University of Oxford

03/09 – 03/13 **Project Investigator, Young Scientist Award (DST)**,
Indian Institute of Technology, Delhi (IIT, Delhi) & Department of Science &
Technology (DST)
Synthesis of polybenzoxazines derivatives for applications as binders in friction materials for brakepads

01/09 – 03/09 **Assistant Manager**, Seigwerk India Private Limited,

- Management of Documentation and Research Centre, Patent*
- 09/06 – 08/07** **Postdoctoral Research Fellow**, University of Nottingham
- Non-Covalent Assembly of Functional Nanostructures (Carbon nanotubes)*
- 10/05 – 06/06** **Postdoctoral Research Fellow**, University of Oxford
- Materials for Electro-optic Applications*
- 09/01 – 09/02** **Research Assistant**, Indian Institute of Technology, New Delhi, India.
- Synthesis, Characterisation and Evaluation of Azido Polymers as Energetic Binders*
- 05/00 - 06/00** **Industrial Placement**, Larsen and Toubro, Mumbai, India.
- Evaluation of Thermal Analysis Systems.*
- 04/00 - 05/00** **Summer Training**, Indian Institute of Technology, New Delhi, India
- Modification of Polypropylene by Reactive Extrusion.*
- 11/98 - 12/98** **Winter Training**, Indian Institute of Technology, New Delhi, India.
- Kinetic Study using spectroscopic techniques*

Awards and recognitions:

1. **Invited talk**, Young Scientists Conclave on 07-08 August, (YSC-2021) in an International Seminar entitled "Recent Advances in Chemistry and Material Science in Young Scientists Conclave on 07-08 Aug, 2021 (YSC-2021)" organized by **Indian Chemical Society** to commemorate 160th Birth Anniversary of Acharya P. C. Ray.
2. **Invited talk**, International Conference on Polymer Science & Composite Materials 07-08 July 2021, Bucharest, Romania.
3. Member of **National Advisory Committee**, Asian Polymer Association (APA), July 2021.
4. Awarded as the first **Most Creative Research Award** in 4th International Symposium on Polybenzoxazines, Luxembourg Institute of Science and Technology (LIST), 31st May-4th June **2021**.
5. **Keynote speaker** Emergence of Sustainable Benzoxazine Frameworks: A New Story with Greener Future, in Green forum, 4th International conference ISPBZ 2021 in Luxembourg (31st May-4th June 2021), <https://www.ispbz2020.lu/programme/keynote-speakers/> Luxembourg Institute of Science and Technology (LIST, <https://www.ispbz2021.lu/>)
6. **Research Excellence Award**, Shiv Nadar University, Delhi-NCR, 2021.
7. **Invited talk** on Asian Polymer Association (APA) - Sustainability Forum on Sustainable Polymers for Energy Sector : Indian Scenario, Webinar, April 24, 2021.
8. **Invited speaker** and **panelist member** for National Resource Centre for Education (NRCE), National Institute of Educational Planning and Administration (NIEPA) under

the Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT), 11th February 2021.

9. **Chief Executive member** of Sustainability Forum in Asian Polymer Association (APA) <https://asianpolymer.org/>, since Oct 2020.
10. Invited lecture, National Webinar on Sustainable Polymers, Shyam Lal College, University of Delhi, Nov 19, 2020.
11. Invited speaker for International Webinar on 'COVID – 19 and 3Ls: Lives, Livelihood and Lockdown', Talked about "Research Then, Now and in Future", held on 26th April, 2020 organized under 'e-Saanidhy: 2020' Maitreyi College, University of Delhi.
12. Participated, 24th Annual Green Chemistry & Engineering Virtual Conference, Jun15-19, 2020.
13. Invited speaker for the Global Virtual Conference on Green Chemistry, October 05-06, 2020.
14. Selected for **CRSI Bronze award 2021** for outstanding achievements in research.
15. Awarded for outstanding achievements "Distinguished alumna award 2020", Maitreyi College, University of Delhi, 16th June 2020.
16. Invited speaker for International Webinar on 'COVID – 19 and 3Ls: Lives, Livelihood and Lockdown', Talked about "Research Then, Now and in Future", held on 26th April, 2020 organized under 'e-Saanidhy: 2020' Maitreyi College, University of Delhi.
17. **Invited talk**, "Green Chemistry: Expanding Frontiers of Novel Applications" GBU, 26th Feb 2020.
18. **Keynote speaker**, Ch. Chhotu Ram (PG) College, Mujjaffar Nagar, Uttar Pradesh, Green Chemistry Workshop, 18th Feb 2020.
19. Invited speaker, First joint **SNU-JNCASR symposium on 'Emerging Materials'**, JNCASR, Bangalore, **8-9 November 2019**.
20. Invited speaker, "**Knowledge Clique**" session as a knowledge management initiative, to talk on the best practices and learning in designing experiments on nanodrug delivery vehicles, 14th November 2019, Dr. Reddy's Hyderabad.
21. Invited for a panel discussion titled, "**My Journey: In and After Maitreyi**", Maitreyi Alumni Association, 16th October 2019.
22. Invited for the interaction in the "**Industry Academia Conclave on Energy Storage**", DST, Govt. of India, MNIT Jaipur, 30th Nov 2019.
23. **BIRAC-SRISTI: GYTI 2019 (Gandhian Young Technological Innovation) award**, Team: Deepika Kannan, Nisha Yadav, Guide: Dr. Shailja Singh, Dr. Bimlesh Lochab, Dr. Soumya Pati, Modernization of traditional anti-malarial drug artesunate via Nanomedicine approach, 6th July 2019, Vigyan Bhawan, New Delhi, award from Honorable Vice-President of India, Shri Venkaiah Naidu.
24. ACS Publications award as certificate for recognition for ACS Reviewing activity, 2018.
25. Invited talk in Zhejiang Province, Next generation battery, China, 16-21st Oct 2018.
26. Invitation to become as a member in Expert Committee on Bibliometrics, DST, 2nd meeting, September 20-21, 2018 at University of Hyderabad, Hyderabad. Invited to give a lecture and followed by a discussion to evolve guidelines regarding predatory journals in India.
27. **ACS invitation**, Invited Lecture in the **Young Talents and Upcoming Investigators**, "The Third International Symposium on Polybenzoxazines: Towards Diamond Jubilee of Benzoxazine Chemistry." auspices of The Division of Polymeric Materials Science

and Engineering (PMSE), The American Chemical Society, New Orleans, Louisiana in March 18-22, 2018.

28. ACS invitation for **Presiding first session in American Chemical Society** 255th ACS, New Orleans, Louisiana in March 18-22, 2018.
29. **Invitation to contribute an article to Regional** - INDIA Themed Issue of Green Materials, Thomas Reuters, 2017.
30. **Invited Lecture**, UK, Li-SM³ conference on energy storage devices to give oral presentation, energy conference, 26-27 April 2017 (available online: **YouTube** Organizers uploaded research presentation in energy conference, LiSM3 2017, London, UK on 26-27 April 2017 is available on YouTube <https://www.youtube.com/watch?v=UuqkND3gPq8&feature=youtu.be> and <http://www.lism3.org/>
31. **International Travel support Grant** from DST to attend conference in London, UK, Li-SM³ conference on energy storage devices to give oral presentation 2017.
32. Outstanding contribution in Reviewing, Electrochimica Acta, Elsevier, Nov 2016.
33. **Plenary lecture**, Biopolymers & Green Composites- BPGC 2016– 4th in series, on 29th & 30th September 2016 at Hotel Beaumonde The Fern, Ernakulam South, Cochi, Kerala.
34. Judge for “Symposium” for RYAN SCIENTIFIC MILIEU 2016, 23rd August 2016
35. **Invited talk** in National Chemical Laboratory, Pune, 8th March 2017.
36. **Invited lectures** at University of Delhi, Gautam Buddha University, etc.
37. ACS invitation for **Chairing session in American Chemical Society** ACS, Green Benzoxazine monomers and polymers section, Indianapolis, **2013**.
38. **Invited Lecture**, ACS, Green Benzoxazine monomers and polymers section, Indianapolis, **2013**.
39. Member of American Chemical Society, ACS 2013-17 (Chaired session in ACS, Benzoxazine section)
40. DST, **International Travel support Grant** to attend conference in China, World Congress on Engineering and Technology (CET2012) to give oral presentation 2012.
41. Invited Speaker, at Institute of Engineers India, Safety Convention at Hotel Le Meridien from 9-11 August, 2012 (Best Speaker Appreciation)
42. Certificate of Appreciation in organizing the Star College Workshop (Ramjas College, University of Delhi), Dec 2011.
43. Best Poster award, University of Delhi (NWREE), 2010
44. Young Scientist Award, Department of Science & Technology (DST), 2009-2013.
45. Editorial and Academic Board Member, NanoTrends Journal, since Aug 2009
46. Fellowship from C. R. Barber Trust Fund, Travel fellowship, IoP, UK, 2005.
47. Member of Institute of Physics (IoP), 2005-2006.
48. Member of Polymer Physics group, 2005-2006.
49. Felix Scholarship for pursuing D.Phil., UK, 2002-2005.
50. Council of Scientific and Industrial Research–Junior Research Fellowship, 1999.
51. Council of Scientific and Industrial Research–University Grant Commission- National Eligibility Test, 1999.

52. All India Graduate Aptitude Test in Engineering (Chemistry), 93.92 percentile, 1999.
53. Qualified Subject GRE (AGRE) in Chemistry with a Formula Score 86, 1999.
54. Merit-cum-Means Scholarship, IITD, 1997-1999.
55. Certificate of Merit for standing 1st in B. Sc. (Hons.) Chemistry, 1997.
56. Radha Sai Ram Memorial prize, Best Student in Chemistry, B. Sc. (Hons.) Chemistry, 1995.
57. Membership of ACS (since 2013), CRSI (Lifetime) and the Society for Polymer Science India (Lifetime).

Media Interactions/Outreach on Invitation:

1. **Newspapers** cited B. Lochab, Green Chemistry work on Li-S battery, PTI, 24th Aug 2020.
2. **Newspapers** cited B. Lochab, Green Chemistry Symposium, Uttar Pradesh, 19th Feb 2020
3. Invited as an **expert** for a **recording programme on "लीथियम ऑयन बैटरी"** for Panel discussion, **Vigyan Prasar, Department of Science and Technology**, Govt. of India, 24th October 2019. <https://www.indiascience.in/videos/rechargeable-duniya-h>
4. **Newspaper** cited B. Lochab, Green Chemistry in Hindustan Magazine, Uttar Pradesh 27th Feb 2017.

Publications (citations = 1449, h-index = 22, i10-index = 30)

2021

1. Nagarjuna Amarnath, Sourav Mukherjee and **Bimlesh Lochab**, Understanding the Stereochemical Effect on the Properties of Emerging Thermosets: Sustainable Polybenzoxazines, *ACS Sustainable Chem. Eng.* **2021**, 9, 22, 7550–7560.
2. **Bimlesh Lochab***, Monisha Monisha, Nagarjuna Amarnath, Pratibha Sharma, Sourav Mukherjee and Hatsuo Ishida*, Review on the Accelerated and Low-Temperature Polymerization of Benzoxazine Resins: Addition Polymerizable Sustainable Polymers, *Polymers* **2021**, 13(8), 1260; <https://doi.org/10.3390/polym13081260>.
3. Nisha Yadav, Monisha Monisha, Rashmi Niranjana, Amrita Dubey, Sachin Patil, Richa Priyadarshini*, **Bimlesh Lochab***, Antibacterial performance of fully bio-based chitosan-grafted-polybenzoxazine films: Elaboration and properties of released material, *Carbohydr. Polym.* **2021**, 254, 117296.

2020

4. Nisha Yadav, Deepika Kannan, Sachin Patil, Shailja Singh* and **Bimlesh Lochab***, Amplified activity of artesunate mediated by iron oxide nanoparticles loaded on graphene oxide carrier for cancer therapeutics, *ACS Appl. Bio Mater.* **2020**, 3, 10, 6722–6736.
5. Divambal Appavoo*, Nagarjuna Amarnath*, **Bimlesh Lochab**, Cardanol and Eugenol Sourced Sustainable Non-Halogen Flame Retardants for Enhanced Stability of Renewable Polybenzoxazines, *Front. Chem.* **2020**, Front. Chem., 30 September 2020 | <https://doi.org/10.3389/fchem.2020.00711>. *equal contribution
6. Monisha Monisha, Preetham P, Arnab Ghosh, Ajit Kumar, Saad Zafar, Sagar Mitra* and **Bimlesh Lochab***, Halogen-free flame-retardant sulfur copolymers with stable Li-S battery performance, *Energy Storage Mater.*, **2020**, 29, 350-360.
7. Barla Rajkumar, Lubna Khanam, Emmanuel N. Koukaras, Ganesh D. Sharma, Samarendra P. Singh, **Bimlesh Lochab**, Cardanol- and guaiacol-sourced solution-

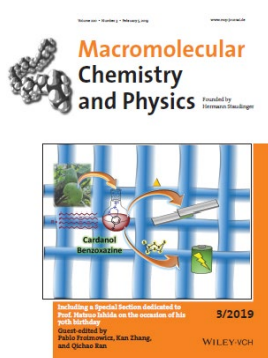
processable green small molecule-based organic solar cells. *ACS Sustainable Chem. Eng.*, **2020**, 8, 15, 5891–5902, <https://doi.org/10.1021/acssuschemeng.9b07600>.

2019

8. Nagarjuna Amarnath, Swapnil Shukla and **Bimlesh Lochab**, Isomannide derived chiral rigid fully biobased polybenzoxazines *ACS Sustainable Chem. Eng.*, **2019**, 7, 22, 18700-18710, <https://doi.org/10.1021/acssuschemeng.9b05305>.
9. Nisha Yadav, V. Kallur, D. Chakraborty, P. Johari, **Bimlesh Lochab**, Control of Functionalities in GO: Effect of Brønsted acids as Supported by Ab-initio Simulations and Experiments. *ACS Omega*, **2019**, 45, 9407-9418 (<http://dx.doi.org/10.1021/acsomega.9b00676>). (ACS live presentation. <http://pubs.acs.org/doi/suppl/10.1021/acsomega.9b00676>)
10. Nisha Yadav, **Bimlesh Lochab**, A comparative study of Graphene Oxide: Hummers, Intermediate and Improved method. *Flat Chem.: Chemistry of flat materials* **2019**, 13, 40-49.
11. Monisha Monisha, Nisha Yadav, **Bimlesh Lochab**, Sustainable framework of chitosan-benzoxazine with mutual benefits: Low curing temperature, and improved thermal and mechanical properties, *ACS Sustainable Chem. Eng.*, **2019**, 7, 4, 4473-4485 DOI: 10.1021/acssuschemeng.8b06515.
12. Kumar, N. #, Yadav#, N., Amarnath#, N., V. Sharma#, S. Shukla, A. Srivastava, P. Prasad, A. K. Singh, S. Garg, S. Singh*, S. Sehrawat*, **B. Lochab***, Integrative Natural Medicine Inspired Graphene Nanovehicle-Benzoxazine derivatives as Potent Therapy for Cancer, *Mol. Cell. Biochem.* **2019** Apr; 454(1-2):123-138. # *Equal contribution*
13. D. Kannan, Nisha Yadav, S. Ahmed, P. Namdev, S. Bhattacharya, **Bimlesh Lochab*** and S. Singh*, Pre-clinical study of Iron oxide nanoparticles fortified Artesunate for efficient targeting of malarial parasite. *EBioMedicine* **2019**, <https://doi.org/10.1016/j.ebiom.2019.06.026>, (Published by THE LANCET)
*corresponding authors

2017-18

14. Monisha Monisha, Nagarjuna Amarnath, Sourav Mukherjee, **Bimlesh Lochab**, Cardanol Benzoxazines: A Versatile Monomer with Advancing Applications, 2018, *Macromol. Chem. Phys.*, <https://doi.org/10.1002/macp.201800470>. (IF 2.492). (Hot Topic: Batteries and Supercapacitors, 15 December **2018**, **Top downloaded paper 2018-2019**)

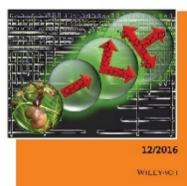


15. Nagarjuna Amarnath, Swapnil Shukla, and **Bimlesh Lochab**, Harvesting the benefits of inherent reactive functionalities in fully bio-sourced isomeric benzoxazines, *ACS Sustainable Chem. Eng.*, **2018**, 6 (11), 15151–15161, DOI: 10.1021/acssuschemeng.8b03631.
16. Nisha Yadav, Naveen Kumar, Peeyush Prasad, Shivani Shirbhate, Seema Sehrawat, **Bimlesh Lochab**. Stable dispersions of covalently tethered PEG-PAMAM-Graphene oxide Nanoconjugates as an effective payload for siRNA for Breast Cancer Therapy. *ACS Appl. Mater. Interfaces*, **2018**, 10 (17), 14577–14593.

17. Vijeta Sharma; Nagarjuna Amarnath; Swapnil Shukla; R Ayana; Nisha Yadav; Deepika Kannan; Naveen Kumar; Seema Sehrawat; Soumya Pati; **B. Lochab***, S. Singh*, Benzoxazine derivatives of phytophenols show anti-plasmodial activity via sodium homeostasis disruption, *Bioorg. Medicin. Chem. Lett.* **2018**, 28(9), 1629-1637, <https://doi.org/10.1016/j.bmcl.2018.03.047>.
18. Monisha, Monisha; Yadav, Nisha, Srivastava, Shashi; Singh, Samarendra; **Lochab, Bimlesh**, Sustainable one-step strategy towards low temperature curable superparamagnetic composite based on smartly designed Iron nanoparticles and cardanol benzoxazine, *J. Mater. Chem. A*, **2018**, 6, 2555 - 2567.
19. N. Amarnath, D. Appavoo, **Bimlesh Lochab**, Eco-friendly halogen-free flame retardant cardanol polyphosphazene polybenzoxazine networks, *ACS Sustainable Chem. Eng.*, **2018**, 6 (1), 389–402.
20. Monisha, S. Shukla, **Bimlesh Lochab**, Nanoparticles as curing and adhesive aid for biobased and petrobased polybenzoxazines, *Green Mat.*, 2017, 5(2), **2017**, pp. 94-102. (Themed issue on latest advances from India) DOI: 10.1680/JGRMA.17.00004.
21. Arnab Ghosh, Swapnil Shukla, Monisha, Ajit Kumar, **Bimlesh Lochab***, and Sagar Mitra*, Sulfur Co-polymer a New Cathode Structure for Room Temperature Sodium-Sulfur Batteries, *ACS Energy Lett.*, **2017**, 2 (10), 2478–2485. *corresponding authors
22. Nisha Yadav, A. Dubey, S. Shukla, C. P. Saini, G. Gupta, R. Priyadarshini, **B. Lochab**, Graphene Oxide Coated Surface: Inhibition of bacterial biofilm formation due to specific surface-interface chemical interactions, *ACS Omega*, **2017**, 2 (7), 3070–3082.

2016-2014

23. Pratibha Sharma, Manju Srivastava, **B. Lochab**, Devendra Kumar, Arunachalam Ramanan, and Prasun Kumar Roy, Metal-Organic Frameworks as curing accelerators for benzoxazines, *ChemistrySelect*, 2016, 3924 – 3932.
24. S. Shukla, A. Ghosh, P. K. Roy, S. Mitra and **B. Lochab**, Cardanol benzoxazines - a sustainable linker for elemental sulphur based copolymers via inverse vulcanization, *Polymer* 2016, 99, 349-357.
25. S. Shukla and **B. Lochab**, Role of higher aromatic content in modulating properties of cardanol based benzoxazines, *Polymer* 2016, 99, 684-694.
26. Arnab Ghosh, Swapnil Shukla, Gaganpreet Singh Khosla, **Bimlesh Lochab** & Sagar Mitra, Sustainable Sulfur-rich Copolymer/Graphene Composite as Lithium-Sulfur Battery Cathode with Excellent Electrochemical Performance, *Sci. Rep.* 2016, 6, 1-13.
27. Swapnil Shukla, Manorama Tripathi, Arup Mahata, Biswarup Pathak, **Bimlesh Lochab**, Kinetics behind a strategy for modulation of sustainable benzoxazines: Experimental study and its theoretical verification, *Macromol. Chem. Phys.*, 2016, 217, 1342–1353. Highlighted as **cover page**.



28. Swapnil Shukla, Arnab Ghosh, Uttam Kumar Sen, Prasun Kumar Roy, Sagar Mitra, **Bimlesh Lochab**, Cardanol benzoxazine-Sulfur Copolymers for Li-S batteries: Symbiosis of Sustainability and Performance, *ChemistrySelect*, 2016, 1, 594-600.
29. Pratibha Sharma, **Bimlesh Lochab**, Devendra Kumar, Prasun Kumar Roy, Sustainable bis-benzoxazines from cardanol and PET derived terephthalamides, *ACS Sustainable Chem. Eng.*, 2016, 4 (3), 1085–1093.

30. Swapnil Shukla, Arup Mahata, Biswarup Pathak and **Bimlesh Lochab**, Cardanol benzoxazines – interplay of oxazine functionality (mono to tetra) and properties, *RSC Adv.*, 2015, 5, 78071–78080.
31. Pratibha Sharma, **Bimlesh Lochab**, Devendra Kumar, Prasun Kumar Roy, Interfacial encapsulation of biobased benzoxazines in epoxy shells for temperature triggered healing, *J. Appl. Polym. Sci.* 2015, 132, 42832, DOI: 10.1002/APP.42832.
32. Pratibha Sharma, Swapnil Shukla, **Bimlesh Lochab**, Devendra Kumar, Prasun Kumar Roy, Microencapsulated cardanol derived benzoxazines for self-healing applications, *Mater. Lett.* (2014), 133, 266-268.
33. **Bimlesh Lochab**, Swapnil Shukla and Indra K. Varma, Naturally occurring phenolic sources: Monomers and Polymers, *RSC Adv.*, 2014, 4, 21712-21752.

2013-2002

34. **Bimlesh Lochab**, Indra K. Varma and Jayashree Bijwe, Blends of benzoxazine monomers: Effect of structure and composition on polymer properties, *J. Therm. Anal. and Calorimetry*, 2013, 111, 1357-1364.
35. **Bimlesh Lochab**, Indra K. Varma and Jayashree Bijwe, Sustainable polymers derived from naturally occurring materials, *Adv. Mater. Phys. Chem.*, Vol. 2 No. 4B, 2012, pp. 221-225. doi: 10.4236/ampc.2012.24B056.
36. **Bimlesh Lochab**, Indra K. Varma and Jayashree Bijwe, Cardanol based Bisbenzoxazines: Effect of Structure on Thermal Behaviour, *J. Therm. Anal. and Calorimetry*, 2012, 107, 661-668.
37. **Bimlesh Lochab**, Indra K. Varma and Jayashree Bijwe, Thermal behaviour of cardanol-based benzoxazines: Monomers and polymers, *J. Therm. Anal. and Calorimetry*, 2010, 102, 769-74.
38. Indra K. Varma, **Bimlesh Lochab** and Jayashree Bijwe, High Performance, High Temperature Polymers - Recent Developments, *Indian Chemical Engineer*, 2009, 51, 98.
39. E. A. Thomsen, D. J. Keeble, B. Lochab, P. L. Burn, H. El-Mkami, and I. D. W. Samuel, Photoinduced charge separation in poly(1,4-phenylenevinylene) derivatives studied by electron paramagnetic resonance, *Org. Electron.*, 2008, 9(5), 809.
40. **B. Lochab**, P. L. Burn, A. Barkhouse, H. E. Assender, D. J. Keeble, E. A. Thomsen, A. Lewis, and I. D. W. Samuel, Electronically asymmetric poly(1,4-phenylenevinylene)s for photovoltaic cells, *Org. Electron.*, 2007, 8, 801.
41. I. K. Varma, Veena Choudhary, Bharti Gaur, **Bimlesh Lochab**, Sonia Oberoi, Rashmi Chauhan Curing and thermal behavior of poly(allyl azide) and bismaleimides, *J. Appl. Polym. Sci.*, **2006**, 101(1), 779 – 86.
42. Gaur B., **Lochab B.**, Choudhary V. and Varma I. K., Azido Polymers: Energetic Binders for Solid Rocket Propellants, *J. Macromol. Sci., Polym. Reviews*, **2003**, C43(4), 505-45. (IF 8.000)
43. Gaur B., **Lochab B.**, Choudhary V. and Varma I. K., Thermal behaviour of poly(allylazide), *J. Therm. Anal. and Calorimetry*, **2003**, 71(2), 467-79.
44. **Lochab B.** and Varma I. K., Thermal behaviour of dendritic methacrylated polyesters, *Mater. Res. Innov.*, **2002**, 6(4), 167-73.

BOOK/ BOOK CHAPTERS

1. Ann-Christine Albertsson, Indra K. Varma, **Bimlesh Lochab**, Anna Finne Wistrand, Sangeeta Sahu and Kamlesh Kumar; Design and synthesis of different types of poly(lactic acid)/polylactide copolymers, in “Poly(lactic acid): Synthesis, Properties, Processing and Applications”, 2021, Eds. Rafael A. Auras, Loong-Tak Lim, Susan E. M. Selke, and Hideto Tsuji, John Wiley & Sons, Inc. 2021 (accepted).
2. Sunanda Sukumar, **Bimlesh Lochab**, “A Manual in Chemistry”, Lab-manual from UG Chemistry labs, Studium Press (India) Pvt. Ltd., 2017, ISBN: 978-93-80012-90-2. (Book)

3. Swapnil Shukla, Nisha Yadav, and **Bimlesh Lochab**, Cardanol based benzoxazines and their applications, *Advanced and Emerging Polybenzoxazine Science and Technology*, H. Ishida, and P. Froimowicz Ed., Elsevier, Amsterdam (2017), Chapter 24, pp 451-470, ISBN: 978-0-12-804170-3
4. Swapnil Shukla and **Bimlesh Lochab**, Lignin based phenols: Potential feedstock for renewable benzoxazines, *Advanced and Emerging Polybenzoxazine Science and Technology*, H. Ishida and P. Froimowicz Ed., Elsevier, Amsterdam (2017) Chapter 25, pp 473-496, ISBN: 978-0-12-804170-3
5. Ann-Christine Albertsson, Indra K. Varma, **Bimlesh Lochab**, Anna Finne Wistrand and Kamlesh Kumar; Design and Synthesis of Different Types of Poly(Lactic Acid), in "Poly(lactic acid): Synthesis, Properties, Processing and Applications", 2010, Eds. Rafael A. Auras, Loong-Tak Lim, Susan E. M. Selke, and Hideto Tsuji, John Wiley & Sons, Inc. 2010, Chapter 4, pp. 43-55, ISBN: 978-0-470-29366-9.

PATENTS

1. Rajkumar Barla, Nagarjuna Amarnath, Lubna Khanam, Samarendra Pratap Singh and **Bimlesh Lochab**, Biofeedstock-derived functional groups based organic semiconductors and synthesis thereof, Indian Patent Application No.: 202111012988 dt. March 25, 2021.
2. Burn P. L., **Lochab B.**, Charge separation polymers for photovoltaic cells. PCT Int. Appl. (2007), 29pp. WO 2007012844 A2 20070201 CAN 146:209729 AN 2007:118131
3. Varma I. K., Choudhary V., Gaur B., **Lochab B.** and Oberoi S., Development of Energetic Binders (Azido polymers) using Novel Dipolarophiles, Ind. Pat. Appl. 1316/Del/2002/dated 13-05-02.
4. Varma I. K., Choudhary V., Gaur B., **Lochab B.** and Oberoi S., A process for the production of energetic binder (Azido Polymer), Ind. Pat. Appl. 1316/Del/2002/dated31-12-02.

CONFERENCE PUBLICATIONS

1. K. Sanjana, Monisha, B. Lochab, Designing of S/Se encapsulated rGO as active cathode material for high-performance Li-S/Se batteries", Students' Research Convention 2019, 30-31 March 2019, IIT Kanpur.
2. B. Lochab, Swapnil Shukla, Arnab Ghosh, Sagar Mitra, "Waste derived Li-S battery Cathode Materials", International Conference on Advanced Rechargeable Batteries and allied Materials (ICARBM-2017), Centre for Materials for Electronics Technology (CMET), 8-10th March 2017, Pune, Maharashtra, India.
3. Swapnil Shukla, Arnab Ghosh, Sagar Mitra, Bimlesh Lochab, Inverse vulcanization polymer composites via sustainable route for Li-S battery, International Conference on Advances of Energy Research, ICAER 2016, IIT Bombay.
4. B. Lochab, D. S. Varma, "Polymers: Safety in Sustainable Development" in 'Industrial Safety' in the Safety Convention 2012.
5. Singh S., Gaur B., Lochab B., Choudhary V. and Varma I. K., "High Energy Materials: Emerging Trends", Proceedings of the 4 th International High Energy Materials Conference & Exhibit, HEMCE-2003, Ed. by Dr. S. N. Asthana, 18th-20th Nov 2003, 328-331.
6. Bimlesh Lochab, Sini N. K., A Step towards Renewable Polymers- Replacement of Petro based Phenol, Proceedings on National Workshop on Renewable energy and Environment, University of Delhi, 28th -29th Jan 2011.
7. Bimlesh Lochab, Harvesting Solar Energy – Organic Solar Cells, Proceedings on National Workshop on Renewable energy and Environment, University of Delhi, 28th - 29th Jan 2011.

TEACHING ACTIVITIES: COURSES

UG level

1. Chemical Principles (Core course L:T:P 3:1:1, 5 credits)
2. Basic Organic Chemistry –I (Core course L:T:P 2:1:1, 4 credits)
3. Basic Organic Chemistry –II (Core course L:T:P 2:1:1, 4 credits)
4. Chemical Analysis Lab (UWE: University wide elective, L:T: P 1:0:1, 2 credits)
5. Macromolecules (UWE: University wide elective, L:T: P 3:0:0, 3 credits)
6. Topics in Nanotechnology (UWE, L:T:P 3:0:0, 3 credits)
7. Chemistry in our life (CCC, Common core curriculum, L:T:P 3:0:0, 1.5 credits)
8. Crime and Chemistry (CCC, L:T:P 3:0:0, 1.5 credits)

PG level

9. Polymer Chemistry and its scope (Core course L:T:P 3:0:0, 3 credits)
10. Green Chemistry and sustainability (Core course L:T:P 3:0:0, 3 credits)
11. Intelligent materials in medicine (Core course L:T:P 3:0:0, 3 credits)

RESEARCHERS/NUMBER

Current: Ph.D. students/5

Completed PhD/ 5 (1 under review)

Completed UG thesis/ 14

THESIS/REPORTS SUBMITTED

Graduate PhD thesis (completed)

1. Monisha [1610120067] Ph. D. Thesis: Design and exploration of bio-sourced benzoxazines for thermoset and energy applications, September 2020 (Date of synopsis 13/07/2020, Thesis submitted). **Initial position: PDF, Aarhus University, Denmark.**
2. Rajkumar Barla [1310120033], Ph. D. Thesis: Difluorobenzothiadiazole based solution-processable organic small molecules: molecular design, synthesis and photovoltaic applications, 26 Nov 2020.
3. Nagarjuna Amarnath [1610120068], Ph. D. Thesis: Design, synthesis, and exploration of sustainable polybenzoxazines for adhesive and flame-retardant applications, 31 July 2020. Dr. Nagarjuna Amarnath, **Initial position: Scientific officer in 'Fraunhofer IFAM', Bremen, Germany.**
4. Nisha Yadav, May 2019, "Designing and exploration of smart nanomaterials for biomedical applications", (Ph. D. thesis) **Initial position: PDF @ WWSC (Wallenberg Wood Science Center) and KTH Royal Institute of Technology, Sweden, Prof. Minna Hakkarainen minna@kth.se**
5. Swapnil Shukla, Dec 2016, "Sustainable Benzoxazines: Sources, Synthesis and Applications", Defended thesis 12th Dec 2016. **Initial position: Research Scientist, Polymer R&D, Reliance Corporate Park, Reliance Industries Limited, Navi Mumbai.**

Graduate PhD thesis (undergoing)

6. Sachin Patil [1710120119], ongoing July 2021, "Nanomaterials for biological applications"
7. Sourav Mukherjee [1710120121], ongoing July 2021, "Low temperature curable new phenolic thermoset resins"
8. Saad Zafar [1910120107], Joined Aug 2019, "Next generation sustainable metal sulfur batteries – Cathodic materials for stable performance"
9. Sangeeta Sahu [1910120184], Joined Jan 2020, Exploration of Sustainable sourced nanomaterials for applications in water purification to catalysts.
10. Vaishaly Duhan [2010120937], Joined Aug 2020, Functionalized sustainable benzoxazines- Biosourced feedstocks.

Undergraduate Final Year Projects:

1. J. Tripathi (B.Sc. Res Chemistry), Aug2020- May2021, BPA based polybenzoxazine: An alternative class of phenolic polymer.
2. K. Sanjana (B.Sc. Res Chemistry), Aug2019- May2020, Design of cathodic material for Li-S battery.
3. Vedha Kallur (B.Sc. Res Chemistry), Aug2018-Apr19, Antibacterial Performance of Chitosan Conjugates.
4. Shivani Sharma (B.Sc. Res Chemistry), Aug2017-April 2018, Reduced graphene oxide via sustainable routes.

OUR Projects:

1. Muskan Sharma (B.Sc. Res Chemistry), Year: 2020-May2021, Synthesis of carbonaceous material from biomass waste: Value-added recycling.
2. Malavika Ramkumar (B.Sc. Res Chemistry), Year: 2019-May2020, Sustainable polybenzoxazine frameworks with novel scope of applications. **Selected: Final year collaborative research project (2021-22), Case Western University, USA.**
3. Kankonika Bhattacharya (B.Sc. Res Biotech), Year: 2019-May2020, Smartly-designed efficient drug tethered nanoparticles.
4. Sashreek Jindal (BMS), Year: 2018-Apr19, Prevention of breaking away of icebergs from ice-sheets and ice-shelves ("very good" grade).
5. Vedha Kallur (B.Sc. Res. Chemistry), Year: 2017-Apr18, Fluorinated carbon-based nanoparticles coatings as anti-biofouling surfaces. ("very good grade") **Joined: MS in Cancer Chemical Biology, Univ. of Michigan, USA.**
6. K. Sanjana (B.Sc. Res. Chemistry), Year: 2017- Apr18, To synthesize, characterize, and explore electrochemical capacity of sulfur nanoparticles based cathodic material in Li-S battery. **(Excellent grade) Joined: Ph.D. in Materials Science, Penn State University, USA.**
7. Shivani Sharma (B.Sc. Chemistry), Year: 2016-2017, To synthesize, characterize and explore UV-curable self-healing polybenzoxazines. ("very good grade")
8. Shivani Shirbhate (B.Sc. Biotechnology), Synergistic effect of KLF4 and EPAC1 inhibition in Breast Cancer: Graphene based Nanomedicine therapy targeting Metastatic Tumor-Endothelial Interface, OUR scheme, BSRes. (Biotechnology) (School of Natural Sciences), 2015-16. (Dr. Seema Sehrawat Advisor; B. Lochab: Co-advisor), 2015-16. ("very good grade")
9. Gaganpreet Singh Khosla (B. Tech. ECE, School of Engg.), 2014-2015, To Optimize the Performance of Gallic Acid based rGO for Lithium Sulphur Battery. ("very good grade")
10. Gaganpreet Singh Khosla (B. Tech. ECE, School of Engg.) Jan-Apr 2015, To design, modify, characterize and explore graphene based nanomaterials (via sustainable and non-sustainable route) for energy storage devices. **(Excellent grade) Joined: Master in Energy systems, University of New South Wales, Australia.**

STUDENT ACHEIVEMENTS

1. **Best Oral Presentation Award, Saad Zafar**, in Science for Sustainable Development (SSD-20) "in the National Seminar 'Science for Sustainable Development' organized by Department of Chemistry, B. Borooah College held on Sep 25-26, 2020 in association with Assam Science Technology & Environment Council (ASTECC), Department of Science & Technology, Govt. of Assam.
2. Poster Presentation, **Sangeeta Sahu**, Sustainable development of copolymers made from bio based benzoxazine monomer and industrial waste sulfur" in the International

Conference on 'Progress and Challenges in Modern Day Science' (PCMDS-2021) organized by Department of Chemistry, June, 17-18 2021 in association with Assam Science Society.

3. **Best Oral Presentation Award, 4th Yr., B.Sc. student K. Sanjana**, "Waste utilization to design S/Se encapsulated rGO as cathode material for high-performance greener batteries", Green and Sustainable Chemistry Conference, Manav Rachna University sponsored by Science & Engineering Research Board (SERB) Department of Science and Technology India, Indian Oil R&D Center Faridabad and Royal Society of Chemistry, North Indian Section, 7-8 Nov 2019.
4. **First Oral presentation award**, K. Sanjana (OUR Project 2019), B. Lochab, "Designing of S/Se encapsulated rGO as active cathode material for high-performance Li-S/Se batteries", Students' Research Convention 2019, 30-31 March 2019, IIT Kanpur.
5. **Awarded International Travel grant, Nisha Yadav**, by Department of Science and Technology (DST-SERB), to present the poster at **the International Conference on Multifunctional, Hybrid and Nanomaterials** held from 11 –15 March 2019 at the Meliá Sitges Hotel Congress Centre, **Sitges, Spain**.
6. Poster Presentation, **Nisha Yadav**, B. Lochab in the International Conference on Multifunctional, Hybrid and Nanomaterials held from 11 – 15 March 2019 organized by Elsevier and Materials today at the Sitges, Spain.
7. **Oral presentation award, Monisha B. Lochab, First prize** in the International Conference on Green Initiatives in Science and Technology (GIST-2019) sponsored by the Royal Society of Chemistry (RSC) and Indian Oil, Jan 2019.
8. **Oral presentation award, Nagarjuna Amarnath**, B. Lochab, **Third prize** in the International Conference on Green Initiatives in Science and Technology (GIST-2019) sponsored by the Royal Society of Chemistry (RSC) and Indian Oil, Jan 2019.
9. Poster presentation, Nagarjuna Amarnath and Bimlesh Lochab*, Bio-origin polybenzoxazines based on sustainable rigid diamines and phenols, 15th International Conference, SPSI MACRO-2018, Polymer Science and Technology, IISER- Poona, co-organised by IISER, NCL-Pune, Savitribai Phule Pune University, Dec 19-20, 2018, Pune, India.
10. Poster presentation, Monisha, Nisha Yadav, and Bimlesh Lochab*, Chitosan-Benzoxazine Biopolymers with Mutual Benefits of Low Curing Temperature and Improved Thermo-Mechanical Properties, 15th International Conference, SPSI MACRO-2018, Polymer Science and Technology, IISER- Poona, co-organised by IISER, NCL-Pune, Savitribai Phule Pune University, Dec 19-20, 2018, Pune, India.
11. Poster presentation, Nisha Yadav, 10th edition of Bengaluru India Nano 2018 conference, Nano for a better world Bengaluru, organized by Department of Information Technology, Biotechnology and Science & Technology, Government of Karnataka in association with Karnataka's Vision Group on Nanotechnology, 5-7 Dec 2018.
12. **Best Poster Presentation Award, (Cash Prize Rs. 20,000), Nisha Yadav** and Bimlesh Lochab, 10th edition of Bengaluru India Nano 2018 conference, Nano for a better world, organized by Department of Information Technology, Biotechnology and Science & Technology, Government of Karnataka in association with Karnataka's Vision Group on Nanotechnology, 5-7 Dec 2018 Bengaluru, India.
13. **Best Poster Presentation Award, Nisha Yadav** and Bimlesh Lochab, organized by NSTC Nanotech, Industry innovations, 28th Nov 2018, New Delhi, India.
14. Poster presentation, K. Sanjana, Monisha, Bimlesh Lochab, Open House & Science Fair, 2017 -2018, OUR project, 17th November 2018, SNU.
15. Poster presentation, V. Kallur, Nisha Yadav, Bimlesh Lochab, Open House & Science Fair, 2017 -2018, OUR project, 17th November 2018, SNU.
16. Poster presentation, **Nagarjuna Amarnath** and Bimlesh Lochab*, Bio-origin polybenzoxazines

17. based on sustainable rigid diamines and phenols, 15th International Conference, SPSI MACRO-2018, Polymer Science and Technology, IISER- Poona, co-organised by IISER, NCL-Pune, Savitribai Phule Pune University, Dec 19-20, 2018, Pune, India.
12. Poster presentation, **Monisha**, Nisha Yadav, and Bimlesh Lochab*, Chitosan-Benzoxazine Biopolymers with Mutual Benefits of Low Curing Temperature and Improved Thermo-Mechanical Properties, 15th International Conference, SPSI MACRO-2018, Polymer Science and Technology, IISER- Poona, co-organised by IISER, NCL-Pune, Savitribai Phule Pune University, Dec 19-20, 2018, Pune, India.
13. Poster presentation, **Nisha Yadav**, 10th edition of Bengaluru India Nano 2018 conference, Nano for a better world Bengaluru, organized by Department of Information Technology, Biotechnology and Science & Technology, Government of Karnataka in association with Karnataka's Vision Group on Nanotechnology, 5-7 Dec 2018.
14. Best Poster Presentation Award, (Cash Prize Rs. 20,000), **Nisha Yadav** and Bimlesh Lochab, 10th edition of Bengaluru India Nano 2018 conference, Nano for a better world, organized by Department of Information Technology, Biotechnology and Science & Technology, Government of Karnataka in association with Karnataka's Vision Group on Nanotechnology, 5-7 Dec 2018 Bengaluru, India.
15. Best Poster Presentation Award, **Nisha Yadav** and Bimlesh Lochab, organized by NSTC Nanotech, Industry innovations, 28th Nov 2018, New Delhi, India.
16. Poster presentation, **K. Sanjana**, Monisha, Bimlesh Lochab, Open House & Science Fair, 2017 -2018, OUR project, 17th November 2018, SNU.
17. Poster presentation, **V. Kallur**, Nisha Yadav, Bimlesh Lochab, Open House & Science Fair, 2017 -2018, OUR project, 17th November 2018, SNU.
18. Poster presentation, **Nisha Yadav**, N. Kumar, P. Prasad, S. Sehrawat, B. Lochab, International conference on Environmental and Biomedical Nanotechnology (ICEBN 2018) organized by Jawaharlal Nehru University and Indian Nano Biologist Association (INBA), 14-15 Sept 2018, JNU, New Delhi, India.
19. Poster presentation, **Sourav Mukherjee**, M. Nagarjuna Amarnath and Bimlesh Lochab*, "Polybenzoxazines from Biobased renewable resources: A Green approach", International Conference on Frontiers in Chemical Sciences (FICS - 2018), Department of Chemistry, IIT Guwahati, 6-8th December, 2018, Guwahati, Assam, India.
20. Invited as a Panel speaker on Role of Nanotechnology in creating a sustainable future organized by NSTC Nanotech, Industry innovations, 28th Nov 2018, New Delhi, India.
21. **Best Oral Presentation Award**, **Nisha Yadav** and B. Lochab: Synthesis of smart nano-vehicle and its application in gene delivery, National conference, Biogenesis- V, Insights and innovations in Biotechnology, 2-3 Aug, 2017, Greater Noida.
22. Nisha Yadav, Awarded Bursary support through EU-project H2020-MSCA (Marie Skłodowska-Curie Actions)-Research and Innovation Staff Exchange (RISE)-2016 n° 734759 to Attend "Summer School of smart nanomaterials for drug delivery applications" and "Advances in Biomaterials for aging diseases", Anacapri, Italy.
23. Nisha Yadav, Abstract on "Functionalised Graphene Oxide for High efficiency Gene Delivery Application" has been selected as short presentation and Poster Presentation in, Summer School of smart nanomaterials for drug delivery applications from 10th June- 16th June 2018, Anacapri, Italy.
24. Nisha Yadav, 6 credit points from University of Naples to pass the final exam of research proposal writing in "Summer School of smart nanomaterials for drug delivery applications." held in Anacapri, Italy.
25. Shivani Sharma, B. Lochab, "**Very Good**" project appreciation to **OUR** student, SNU funded, 2016.
26. **Best Oral Presentation award** in Recent Advances in Chemistry and Biology, Shiv Nadar University, U.P., India, 15th December 2016, sponsored by North Indian region, Royal Society of Chemistry.
27. Poster, Nisha Yadav, A. Dubey, R. Priyadarshini, B. Lochab, Surface-Interface Interactions of GO dictates Biofilm formation, **NANO INDIA 2017** Conference, DST- Nano Mission, 15-16 th March 2017, IIT, Delhi.

28. Oral, Swapnil Shukla, Arnab Ghosh, Sagar Mitra and Bimlesh Lochab, Copolymers of waste raw materials: Sulphur and Phenols for Lithium Sulphur Battery, International conference, **MACRO 2017-Advances in Polymer Science and New Generation Technologies**, Thiruvananthapuram, India, Jan, 2017. (Oral)
29. **Young Scientist oral presentation award (Dr. B. N. Mankad Award)**, Swapnil Shukla, 53rd ACC 2016- Organic and Biochemistry section", Indian Chemical Society, 27-29th Dec 2016, Gitam University, Visakhapatnam, India. (Oral)
30. **First Prize, "Excellent"** project to OUR student, Gaganpreet Singh Khosla 2016.
31. **"Excellent"** project appreciation to OUR student, Gaganpreet Singh Khosla 2015.
32. **Poster Presentation**, Swapnil Shukla, **Divambal Appavoo Gupta** and Bimlesh Lochab, Sustainable benzoxazines-Alternatives to phenolic resins, **"Biopolymers and Green Composites" (BPGC - 2016)**, Centre for Biopolymer Science and Technology, India, September, 2016.
33. **Poster Presentation**, Swapnil Shukla, **Monisha** and Bimlesh Lochab, Agro and Industrial waste utilization for generating Li-S battery cathodic materials, **"Combating Industrial Pollution For Sustainable Environment – A Fusion Of Industrial and Scientific Efforts" (CIPSE - 2016)**, Gargi College, University of Delhi, India, September, 2016.
34. Swapnil Shukla, **First runner up prize** for poster presentation in the One day Symposium **"Emerging Research Trends in Sciences & Grantsmanship"**, SNU, 2016.
35. Nisha Yadav, **First runner up prize** for poster presentation in the One day Symposium, **Current trends in Drug Discoveries Research in India**, SNU, 2015.
36. Swapnil Shukla, **Best Oral Paper Award** in the Green Materials section of the **International Conference on Green Initiatives in Science and Technology (GIST-2015)** sponsored by the Royal Society of Chemistry (RSC) North India Section and Indian Oil, 2015.

PROJECTS FUNDING

1. Synthesis and exploration of Polybenzoxazines (PBZs) resins as an alternative to traditional phenolic resin in friction materials- A possible breakthrough, PI: Prof. J. Bijwe, HoD, ITMMEC, IIT, Delhi Co-PI: Bimlesh Lochab, Core Research Grant (DST-SERB, CRG/2019/000107), 09 March 2020, Rs. 65.7184 L (SNU share 21.49840 lacs), 2 years.
2. Novel Composite Polymeric Adhesives based on fibers and nano-fillers for joining metals, Rs. 26.6 Lakhs, CSIR 22(0786)19/CI/EMR-II (1.11.2019 to 31-10-2022).
3. Development of new Mg-S Battery Chemistry and Electrodes through Synthesis, Characterization, and Simulations, Rs. 74.39520 Lakhs, DST, MES (started in 2018), 3 years, 3rd Dec 2021.
4. Organic-inorganic hybrid-based perovskite materials and their PV devices, Rs. 20.0 Lakhs, GE India Technology Pvt. Ltd., Bangalore 2017, CoPI.
5. Halogen free flame retardant (FR) polybenzoxazine (PBz) resins based on Agricultural biomass, Rs. 28.64 Lakhs, DST-SERB 2014, PI DST, FSER, No. SB/FTP/ETA-0069/2014
6. Biobased polybenzoxazine resins synthesized from agricultural biomass for composite applications, Rs. 18.64 Lakhs (DST 2014, PI (DST, EMRF, SB/S5/GC-05/2014)
7. Benzoxazine monomers and pre-polymers as self-healing agents for epoxy resins, Rs. 9.9 Lakhs, DRDO, 2014, PI (DRDO, CFEES/TCP/EnSG/CARS/18/2014)
8. Synthesis of polybenzoxazines derivatives for application as binders in friction materials for brake-pads, Rs. 23 Lakhs, DST 2010, Young Scientist Award.