VARUN SAXENA

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Education

YEAR	Degree / Exam	Institute	CGPA/% MARKS
2015-Present	PhD (BSBE)	IIT-Guwahati	8.25 (Pre PhD Course work)
2013-15	M.Tech. (Nano-Tech)	Pondicherry University	9.17
2008-2012	B. Tech. (Bio-Tech.)	Amity University Lucknow	6.9
2005	12 th (UP Board)	MBIC Bareilly	74.4%
2003	10 th (UP Board)	MBIC Bareilly	75.16%

Academic Projects & Summer Internships

- 1- Major research area for PhD- "Calcium hydroxyapatite based Nano-antibiotic for biomedical applications."
- 2- M.Tech Major Project "Synthesis of curcumin loaded micelles of vegetable oils and a comparative study of their drug load/release profile and their antimicrobial activity".
- 3- M.Tech Mini project on "Synthesis of ZnO-SiO₂ nanocomposite by ultra-sonication method and a comparative study with sol-gel synthesized silica gel"
- 4- B.Tech final Year Project under the title "Selective characterization of high yielding and drought resistant varieties of *Cicer Areitinum(L.)*" using RAPD markers.
- 5- Summer Project in Indian Veterinary Research Institute Bareilly on Parthenogenesis Vs IVF (in-vitro fertilization) in May-June 2011.
- 6- Summer Project in Indian Veterinary Research Institute Bareilly on IVF (in-vitro fertilization) in May -June 2010.

Research Publications

- 1. Book chapter: Varun Saxena, I Shukla, Lalit M. Pandey. Hydroxyapatite: an inorganic ceramic for biomedical applications. Under review, Elsevier.
- 2. Book chapter: Varun Saxena, Aman Bhardwaj, Lalit M. Pandey. Nanomedicines: Prospective and Beyond. Abstract Accepted
- 3. Book chapter: Aman Bhardwaj, Varun Saxena, Lalit M. Pandey. Cellular interaction of biomaterials: Interfacial interaction deciding the fate of Biomaterial. Abstract Accepted
- 4. Aquib Jawed, Varun Saxena, Lalit M. Pandey. Recent developments on the applications of emerging nanomaterials for the removal of heavy metals. Under Review
- Varun Saxena, Pranjal Chandra, & Lalit M. Pandey. Design and characterization of novel Al-doped ZnO nanoassembly as an effective nanoantibiotic. Applied Nanoscience, 1-17 <u>https://doi.org/10.1007/s13204-018-0863-0</u>

- 6. Sunayan Deka, Varun Saxena, Abshar Hasan, Pranjal Chandra, Lalit M. Pandey. Synthesis, characterization and *invitro* analysis of α-Fe₂O₃-GdFeO₃ biphasic materials as therapeutic agent for magnetic hyperthermia applications. Materials Science and Engineering: C 92, 932-941
- Swati Sharma, Varun Saxena, Anupriya Baranwal, Pranjal Chandra, Lalit M Pandey. Engineered nanoporous materials mediated heterogeneous catalysts and their implications in biodiesel production. 2018 Materials Science for Energy Technologies. 1(1), 11-21
- 8. Abhishek Roy, Varun Saxena & Lalit M. Pandey. 3D printing of cardio-vasculatures: A Review. Materials Technology 33 (6), 433-442
- **9.** Abshar Hasan, Varun Saxena, & Lalit M. Pandey. Surface functionalization of Ti6Al4V via self-assembled monolayers for improved biocompatibility in tissue engineering applications.2018: 34(11); 3494-3506.
- 10. Abshar Hasan, Gyan Waibhaw, Varun Saxena & Lalit M. Pandey. Nano-biocomposite scaffolds of chitosan, carboxymethyl cellulose and silver nanoparticle modified cellulose nanowhiskers for bone tissue engineering applications. International journal of biological macromolecules: International journal of biological macromolecules 111, 923-934
- **11.** Swati Sharma, Sakshi Tiwari, Abshar Hasan, **Varun Saxena** & Lalit M. Pandey. **Recent advances in conventional and contemporary methods for remediation of heavy metal contaminated soils**. 3 Biotech 8 (4), 216
- 12. Varun Saxena, Abshar Hasan, & Lalit M. Pandey. Effect of Zn/ZnO integration with Hydroxyapatite: A Review. Materials Technology, 2017: p. 1-14.
- **13. Varun Saxena**, Abshar Hasan, Swati Sharma & Lalit M. Pandey. **Edible oil nanoemulsion: An organic nanoantibiotic as a potential biomolecule delivery vehicle.** International Journal of Polymeric Materials and Polymeric Biomaterials, 2017: p. 1-10.

Conferences

- International conference on Nanotechnology: Ideas, innovations and initiatives-2017, IIT Roorkee, India. Oral presentation on "Synthesis characterization and antibacterial activity of Al doped zinc oxide", Dec-06th to Dec 08th, 2017.
- International conference on BioMaterials, BioEngineering, and BioTheranostics-2018, VIT Vellore, India. Poster presentation on "Antibacterial mechanism of Fe(III) doped ZnO nanoantibiotic under dark conditions", 24th-28th July, 2018

Workshops and Seminars

- 3. Extended Rheology Characterization, Sept. 18, 2017, by Anton Paar at IIT Guwahati, India
- 4. ZE5 (Flow cytometer) and Droplet digital PCR-QX-200, Oct. 30 to Nov. 3rd 2017, by Bio-Rad at IIT Guwahati, India

Working Experience

Taught in "Biology Classes Lucknow" as senior faculty from June 10, 2012 to July 12, 2013.

Nanotechnological Skills

- 1. Fabrication and Synthesis of different kinds of Nanomaterials via different Physical And Chemical Methods such as precipitation, co-precipitation, Sol-gel, hydrothermal method, Electro spinning method, physical vapor deposition, chemical bath deposition, microwave assisted synthesis, chemical vapor deposition, Sono-chemical synthesis, Combustion techniques etc.
- 2. Fabrication of cast films and thin films by electrophoretic coating and spin coating techniques.
- **3.** Characterizations of synthesized Nano materials such as XRD, TGA, DTA, SEM, EDX, FTIR, RAMAN, UV Visible, photoluminescence, DSC, DLS, Nano indentation, Electrochemical characterization etc.

Biotechnological Skills

- 1. Molecular Biology works (DNA and plasmid isolation and purification from kits and other general methods).
- **2.** Centrifuge, PCR, Chromatography, Blotting, ELISA, and Enzymatic tests.
- **3.** Bioprocess technologies like Fermentation technology and purification.
- 4. Cell culture techniques like cell culture growth, cell line development, feeder layer development, stem cells, etc.
- 5. Production of Various Stem cells such as MSCs, ESCs from goat via IVF and Parthenogenesis.
- 6. Production of VSELs from goat umbilical cord blood and NSCs from goat foetus.

Technical Skills

- 1. **Programming languages:** Basic Knowledge of C, C++, FORTRAN.
- 2. Other: Basic Knowledge of Data Structure & Database Management System.
- 3. Packages: MS Office

Achievements

- 1. Commonwealth Split site fellowship 2018.
- 2. Performed at State level as 'Jila Baal Vigyani" in 2003-04 in Science Exhibition organized by National Children Science Congress.
- **3.** Performed at District level as 'Jila Baal Vigyani" in 2003 in Science Exhibition organized by National Children Science Congress.
- **4.** Performed at District level as 'Jila Baal Vigyani" in 2002 in Science Exhibition organized by National Children Science Congress.
- 5. Have remained throughout College/School topper from class N.C. to Class 12th.

Extra-Curricular Activities

- 1. Won second prize in Poem Writing competition on the eve of Matrubhasha Divas at IIT-Guwahati in April-2016.
- **2.** Won second prize in Quiz Competition of Amrithum 2014 (A tech fest of Centre for Pollution Control) held at Pondicherry University.
- **3.** Student co-ordinator of 'INSPIRE' a program organized by DST (Department of science and technology India) in Amity University in 2011.
- **4.** Student Coordinator of Event "Tech wardrobe Malfunction" in Amity fest, 'SMANVAY-2011'.
- 5. First prize winner in Essay Writing Competition on the eve of "Gandhi Jayanti" in 2003_04.
- 6. Worked as a "Dal Nayak" in 2001 in UP Scouts & guides.
- 7. Worked as a "Toli Nayak" in 2000 in UP Scouts & guides.
- **8.** Won First Prize in Surya Namaskar Competition in February 2001 at Vivekanand Kendra Kanyakumari Bareilly Centre.

Strengths

- 1. Strong analytical, problem solving & organizational abilities.
- 2. Ability to learn new technologies and techniques.
- Highly flexible and adaptable performer.
 Possess a flexible & detail oriented attitude.

Languages Known

- **1-** English (Fluent, IELTS-7)
- 2- Hindi (Fluent)
- 3- German (Elementary Proficiency)4- Sanskrit (Elementary Proficiency)
- 5- Assamese (Elementary Proficiency)