

## Profile Page



Name : Dr Indu Chauhan  
Designation : Assistant Professor  
Department : Bio-Technology  
Qualification : PhD (IIT Roorkee)  
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B.E. (M. D. University, Rohtak)  
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### Research Interests :

Cellulose nanofibers; Aerogels; Bioplastic; Cellulose-metal oxide composites for high end applications; Synthesis, characterization and applications of metal oxide nanostructures; Nano-catalyst; water pollution abatement, waste management

### Other Profile Links :

#### Google Scholar Link :

Indu Chauhan [Click Here](#)

### Journal Publications :

Year	Journal	Publication
2023	Journal of Sol-Gel Science and Technology, 1-13	SS Sonu, N Rai, I Chauhan. Multifunctional Aerogels: A comprehensive review on types, synthesis and applications of aerogels
2021	International Journal of Biological Macromolecules 166, 1586-1616	C Yadav, A Saini, W Zhang, X You, I Chauhan, P Mohanty, X Li. Plant-based nanocellulose: A review of routine and recent preparation methods with current progress in its applications as rheology modifier and 3D bioprinting.
2019	Cellulose 26, 1757-1767	Indu Chauhan, Sudiksha Aggrawal, Raeesh Muhammad, Paritosh Mohanty. Immobilization of $\gamma$ -Fe <sub>2</sub> O <sub>3</sub> nanoparticles on the cellulose surface: role of cellulose in tuning the microstructure and crystallographic phase
2018	Journal of The Institution of Engineers (India): Series E, 1-8	BS Butola, A Garg, A Garg, I Chauhan, Development of Multi-functional Properties on Cotton Fabric by In Situ Application of TiO <sub>2</sub> and ZnO Nanoparticles.

2018	Polym. Composite 39, 3300-3306	Abhijit Majumdar, Bhupendra Singh Butola, Nikita Awasthi, Indu Chauhan and Piyali Hatua. Improving the mechanical properties of p-aramid fabrics and composites by developing ZnO nanostructures.
2017	RSC Adv. 7, 49787–49794	Komal Talreja, Indu Chauhan, Aranya Ghosh, Abhijit Majumdar and Bhupendra Singh Butola. Functionalization of silica particles to tune the impact resistance of shear thickening fluid treated aramid fabrics.
2017	Cellulose, 24, 4163-4171	Aranya Ghosh, Indu Chauhan, Abhijit Majumdar and Bhupendra Singh Butola. Influence of cellulose nanofibers on the rheological behaviour of silica-based shear-thickening fluid
2015	RSC Adv. 5, 83036-83055	Indu Chauhan, Sudiksha Aggrawal, Chandravati and Paritosh Mohanty. Metal oxide nanostructures incorporated/immobilized paper matrices and their applications: A Review
2015	Mater. Express 5, 429-436	Sudiksha Aggrawal, Indu Chauhan and Paritosh Mohanty. Immobilization of Bi <sub>2</sub> O <sub>3</sub> nanoparticles on the cellulose fibers of paper matrices and investigation of its antibacterial activity against E. coli in visible light
2015	Environ. Sci.: Nano. 2, 273-279	Indu Chauhan, Sudiksha Aggrawal and Paritosh Mohanty. ZnO nanowires immobilized paper matrices for visible light induced antibacterial activity against Escherichia coli
2015	Cellulose 22, 507- 519	Indu Chauhan and Paritosh Mohanty. In situ decoration of TiO <sub>2</sub> nanoparticles on the surface of cellulose fibers and study of their photocatalytic and antibacterial activities
2014	RSC Adv. 4, 57885-57890	Indu Chauhan and Paritosh Mohanty. Immobilization of titania nanoparticles on the surface of cellulose fibres by a facile single step hydrothermal method and study of their photocatalytic and antibacterial activities.
2013	Mater. Express 343-349	Indu Chauhan, Sujay Chattopadhyay and Paritosh Mohanty. Fabrication of titania nanowires incorporated paper sheets and study of their optical properties

### Conference Publications :

Year	Conference	Publication
2022	International e-Conference on Nanomaterials & Nanoengineering	Rishpreet Kaur and Indu Chauhan. Cellulose nanofibers reinforced bioplastic films for packaging applications
2022	International conference on Recent Advances in Biotechnology	Kanchan Chauhan and Indu Chauhan. Cellulose microfibrils and clove oil functionalized bioplastic films for food packaging applications
2022	International conference on Recent Advances in Biotechnology	Sonu S S and Indu Chauhan. Molecular dynamics simulation on cellulose aerogel crosslinked with epinchlorohydrin
2021	International Online Conference on Nano Materials (ICN – 2021)	Anshika Bhardwaj and Indu Chauhan. Synthesis of Biopolymer using Food Wastes
2021	CHEMBIOEN-2021	Rishpreet Kaur and Indu Chauhan. Bioplastic: A solution to the conventional plastic
2020	International Conference on "Chemical, Bio & Environmental Engineering (CHEMBIOEN-2020)	Raksha Gupta and Indu Chauhan. Application of nanomaterials for waste water treatment
2019	International Conference on Advanced Materials (ICAM)	Indu Chauhan. Tuning the Microstructure and Crystallographic Phase of Nanoparticles Using Cellulose Fibers
2019	International Conference on "eApplication of Biotechnology in Industry and Society (ABIS-2019)"	Indu Chauhan. Agricultural waste derived cellulose products and their applications

2017	International Conference on Advances in Polymer Science and Technology	Priyal Dixit, Indu Chauhan, Bhupendra Singh Butola and Abhijit Majumdar. Development of STF Impregnated and ZnO Nanorod Modified Kevlar Fabric for Enhanced Impact Energy Absorption
2017	International Conference on "Advancing Green Chemistry: Building a Sustainable Tomorrow	Indu Chauhan, Bhupendra Singh Butola and Paritosh Mohanty. Nanostructures immobilized cellulose matrices for environmental remediation
2016	Open House (Project Demonstration), Indian Institute of Technology Delhi	Sanchi Arora, Aranya Ghosh, Indu Chauhan. STF impregnated material for stab resistance
2014	International Conference on Emerging Materials and Applications	Indu Chauhan and Paritosh Mohanty. Fabrication of TiO <sub>2</sub> nanoparticles decorated papers and study of their photocatalytic applications
2012	23rd Annual General Meeting of MRSI	Indu Chauhan, Sujay Chattopadhyay and Paritosh Mohanty. Preparation of titania incorporated paper products and study of their mechanical and optical properties

### Book/Chapter Publications :

Type	Title	Publisher	Authors	ISBN/ISS N No.	Year
Book Chapter	Microalgae biofuels: a promising substitute and renewable energy. Green Approach to Alternative Fuel for a Sustainable Future	Elsevier	Indu Chauhan, Vivek Sharma, Pawan Rekha, Lovjeet Singh		2023
Book Chapter	Biofuel Production by catalysis, Green Approach to Alternative Fuel for a Sustainable Future	Elsevier	Vivek Sharma, Prashnasa Tiwari, Indu Chauhan, Pawan Rekha		2023
Book Chapter	Carbon-Based Catalysts for Biorefinery Processes: Carbon-Based Catalysts for Valorization of Glycerol Waste From Biodiesel Industry	Wiley Online Library	Pawan Rekha, Lovjeet Singh, Brajesh Kumar, Indu Chauhan, Satyendra Prasad Chaurasia		2022
Book Chapter	Application of Textile Materials in Composites in "Advanced Textile Engineering Materials"	John Wiley & Sons, Inc.	Swati Sharma, Indu Chauhan, Bhupendra Singh Butola	978-1-119-48785-2	2018

### Research Projects :

Role	Project Type	Title	Funding Agency	From	To	Amount	Status	Co-Investigator
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Principle Investigator	National Postdoctoral Research Project	Functionalized Cellulose based Aerogels as All-in-One Material: Synthesis and Application for Environmental Remediation and Energy Efficient Buildings	Science and Engineering Research Board (SERB), DST, Govt. of India	27-09-2017	05-01-2018	Rs 19,20,000	Completed	
Co-Investigator	Seed Grant	Development of Human Hair Keratin Based Matrix for Arsenic Removal from Contaminated Water	TEQIP-III	3-12-2018	3-12-2019	Rs 2,00,000	On-going	Dr. Mahesh Kumar Sah
Principle Investigator	Consultancy Project	In-situ immobilization of ZnO nanoparticles on natural and synthetic fibers	Rico Auto Industries Ltd	December 2021		Rs 1,00,000	Ongoing	

### Events Organized :

Category	Type	Title	Venue	From	To	Designation
Short Term Course/Faculty Development Program	National	Recent Advancement in Biomaterials and Nanotechnology for Biomedical Applications	Dr. B. R. Ambedkar NIT Jalandhar	24-05-2019	28-05-2019	Coordinator
Expert Talk	National	Patents, Design and Trade Marks	Dr. B. R. Ambedkar NIT Jalandhar	24-01-2020	24-01-2020	Coordinator
Expert Talk	National	"How to become a Successful and Skilled Professional"	Dr. B. R. Ambedkar NIT Jalandhar	28-03-2021	28-03-2021	Coordinator
Expert Talk	National	Ionic Liquids as Green solvent for Processing and Chemical Modification of Biomaterials		18-02-2020	18-02-2020	Coordinator

Short Term Course/Faculty Development Program	National	Recent progresses in biomaterials and their applications	Dr. B. R. Ambedkar NIT Jalandhar	10-10-2022	14-10-2022	Coordinator
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### Professional Affiliations :

Designation	Organization
Member (IAENG membership number is: 253494)	International Association of Engineers
Life Member (membership number LM 2483)	The Biotech Research Society, India
Member (Membership no. 31874902)	American Chemical Society (ACS)
Member	Membership number ID AM/10/2020-21
Member (Membership number ID AM/10/2020-21)	The Association of Microbiologists of India (AMI)

### PhD Supervised :

Scholar Name	Research Topic	Status	Year	Co-Supervisor
Rishpreet Kaur	Cellulose nanofibers and Bioactive Agents Incorporated Starch based Bioplastic films for Food Packaging Application.	Ongoing	2022	
Nisha Rai	Functionalized polysaccharide based hydrogels for medical applications	Ongoing	2022	

### PG Dissertation Guided :

Student Name	Dissertation Title	Status	Year	Co-Supervisor
Rishpreet Kaur	Antimicrobial bioplastic films for packaging applications	Completed	2022	
Anshika Bhardwaj	Synthesis and characterization of bioplastic film using food waste	Completed	2021	

### Patents :

Name	Reg./Ref. No.	Date of Award/Filing	Organization	Status
Bhupendra Singh Butola, Abhijit Majumdar, Dinesh Chandra Sharma, Indu Chauhan, Sarika Singh, Sanchi Arora and Aranya Ghosh	FT/IPR/BSB/DTT/2017/0959			Under Process at IIT Delhi
Bhupendra Singh Butola, Abhijit Majumdar, Komal Talreja, Indu Chauhan and Aranya Ghosh.	IDF/07/2017/33			Under Process at IIT Delhi

### Admin. Responsibilities :

Position Held	Organization	From	To
Faculty Coordinator, TechNiTI 2018	Dr. B.R. Ambedkar National Institute of Technology Jalandhar	02-11-18	04-11-18

Hostel Warden	Saraswati Hostel (GH-1), Dr. B.R. Ambedkar National Institute of Technology Jalandhar	14-02-18	30-08-2020
Member	Unnat Bharat Abhiyan (UBA) Cell, Dr. B. R. Ambedkar National Institute of Technology Jalandhar	25-07-18	31-05-2021
Faculty coordinator	Institute Innovation Council of MHRD	01-10-2019	06-07-2021
Member	Unnat Bharat Abhiyan cell	25-07-2018	30-03-2020
Group coordinator	NSS Club	25-10-2018	31-05-2020
Coordinator	Media Cell (Department of Biotechnology)	04-03-2020	Till date
Member	IPR Activity Coordinator (NITJ)	06-07-2021	Till date

### **Award and Honours :**

<b>Title</b>	<b>Activity</b>	<b>Given by</b>	<b>Year</b>
SERB N-PDF	Postdoctoral Research	SERB N-PDF	2017