

Curriculum Vitae

1) **Name** : Dr. Deepak Chhabra
Designation : Professor
Address : UF-102, University Flats, MDU Campus , Rohtak
Mobile : 9541195456
Email Address : deepak.chhabra@mdurohtak.ac.in



2) Educational Qualifications:

Ph.D. (Title): Optimization of Smart Structures for Active Vibration Control using Piezoelectric Sensors and Actuators
Department: Department of Mechanical Engineering, National Institute of Technology, Kurukshetra, Haryana, India

M.Tech(Specialization) : Design of Mechanical Equipments
M.tech Thesis Title : Design & Analysis of Smart Structures for Active Vibration Control using ANSYS
CGPA : 8.5
University : Maharshi Dayanand University, Rohtak

B.Tech. : Mechanical with Honors
Percentage : 74%
University : Kurukshetra University

3) Administrative Responsibilities (Major):

Deputy Director
Centre for Innovation, Incubation and Entrepreneurship
Maharshi Dayanand University
Rohtak, Haryana INDIA

Deputy Director
Centre for IPR Studies
Maharshi Dayanand University
Rohtak, Haryana INDIA

Research & Development Coordinator
Faculty of Engineering & Technology
Maharshi Dayanand University
Rohtak, Haryana INDIA

Coordinator
Certificate Course in 3D Printing & Design
Maharshi Dayanand University
Rohtak, Haryana INDIA

4) Work Experience (Present Institute):

Worked as Assistant Professor in the Department of Mechanical Engineering at UIET, Maharshi

Dayanand University (MDU), Rohtak, from July 2009 to 2022; served as Associate Professor from 2022 to 2025; and has been working as Professor in the same department from 2025 to the present.

5) Awards/Honors/Special Achievements:

- Certificate of appreciation by Vice Chancellor for publishing more than 5 impact factor in the year 2020
- Certificate of appreciation by Vice Chancellor for publishing more than 5 impact factor in the year 2023
- World Top 2% Scientists by Standford University-Elsevier (2024, 2025 & 2026)
- Approved an International travel grant of Rs 1.5 lakh under research policy scheme of University for publishing papers more than 15 cumulative impact factor.
- Received Haryana DST funding of worth Rs 300000/- for the project entitled " Process Parameters Optimization of medical grade PEEK Material Utilized for Fabrication of Craniomaxillofacial Prosthesis using Hybrid Algorithms to investigate the mechanical properties".
- Approved an Post seed grant of Rs 5 lakh under research policy scheme of University for publishing papers more than 30 cumulative impact factor
- Certificate of Appreciation from AICTE ATAL for organizing Faculty development programme on 3D Printing and Design ,organized by UIET on 23rd to 27th Nov, 2020
- Received an International travel grant under TEQIP-II to attend the International Conference on Industrial and Commercial Applications of Smart Structures Technologies (9-14 March, 2014), held in San Diego, California, USA, and to present the research paper titled "Multilevel Optimization for the Placement of Piezo Actuators on Plate Structures for Active Vibration Control Using Modified Heuristic Genetic Algorithm" (Proceedings of SPIE, Vol. 9059, Paper 90590J)
- Received an International Travel Grant from Maharshi Dayanand University (MDU), Rohtak, to present the research paper titled "Performance Analysis of Piezo-Ceramic as Wearable Transducer for Efficient Energy Harvesting" at the International Conference on Sustainable Development 2018, hosted by Athens University of Economics and Business and the International University of Sarajevo, held in Athens, Greece, from 11–15 April 2018.

6) Research

(a) **Specialization:** CAD/CAM, Additive Manufacturing, AI and ML modeling, AM in Healthcare

(b) Projects:

- Reverse Engineering Analysis of the Human Anatomy funded by Dr. RK Foundation fund MDU Rohtak
- Fabrication of Powered Parachute funded by LPS Bosard Rohtak
- Received Haryana DST funding of worth Rs 300000/- for the project entitled " Process Parameters Optimization of medical grade PEEK Material Utilized for Fabrication of Craniomaxillofacial Prosthesis using Hybrid Algorithms to investigate the mechanical properties"
- Post seed grant on Rs 5 lacs on Project entiled "Fabrication of high temperature with inbuilt heated chamber PEEK 3D Printer for developing patient-specific Craniomaxillofacial implants"

7) **Patents :** 03 Granted, 01 filed, 03 Design registration granted

8) Publications Details:

Quality Metrics: **SCOPUS--** Total Citations:3137, h-index:29, i10-index:69
 Google Scholar-- Total Citations: 4284, h-index:33, i10-index:91
 ResearchGate-- Total Citations: 3999, h-index:32
 Web of Science/Publons-- Total Citations: 2214, h-index:26

Books:

Chapters in Books: 5

Journals (i) SCI/SCIE/WOS/SCOPUS/Thomson Reuters:79

(ii) UGC Care List/Approve/Peer Review/others:31

Conferences/Seminars (International/National) etc.:26

9) Membership of Professional Bodies:

- Membership (205321), International Association of Engineers
- Life Membership (L37391); Indian Science Congress
- Membership (m20171201001): Hong Kong Society of Mechanical Engineers

10) Research Supervised/Evaluated:

M.Tech Supervision

- Design and Static Analysis of Dead Axle (Rear) –(Mr. Amit Yadav)
- Design & Optimization of Dead axle of Car using CAE tool (Mr. Lalit Bhardwaj)
- Design of Neural Network Controller for Active Vibration control of Cantilever plate with piezo-patch as sensor /actuator (Mr. Amit Vashisht)
- Design and Analysis of Smart Cantilever Plate Structures for Active Vibration Control using Piezoelectric Sensor and Actuator (Mr. Pardeep Singh)
- Analysis of simple supported plate for active vibration control with piezoelectric sensors and actuators (Mr. Kapil Narwal)
- Design of Smart Structures With Single Input Single Output (SISO) for Active Vibration Control (Mr. Narender Sharma)
- Design of piezoelectric smart structure with Multi input multi output (MIMO) system for active vibration control (Mr. Gaurav Goyal)
- Design of Fuzzy Logic Controller for Active Vibration Control of Cantilever Plate with Piezo - Patches As Sensor /Actuator (Mr. Varun Kumar)
- Design and Analysis of Smart Structures for Active Vibration Control using Artificial Neural Network (Mr. Mohit Kumar)
- Modeling and Simulation of a plate with piezo-patches as sensors/actuators using LQG modal control (Mr. Neeraj Sahgal)
- Modeling and Simulation of a plate with piezo-patches as sensors/actuators using H_∞ and PID modal control (Mr. Monu Malik)
- Design and Analysis of Manual Steering Gear/Rack Using CAE Tool (Mr. Sandeep Sangwan)
- Optimal Placement of Piezo-Sensor in Smart Structure for Active Vibration Control (Mr. Ajay Nara)
- Energy Harvesting using Piezoelectric Material from Wearable Shoe Transducer (Mr. Ashwani Kumar)
- Design of Fire Fighting and Safety in Warehouse- A Case Study (Mr. Naveen Kumar).
- Piezoelectric Energy Harvesting from Dynamics of Fluid Flow. (Ms. Pooja Baghel)
- Comparison of Energy Harvesting using Single and Double Patch PVDF with Hydraulic Dynamism.(Mr. Anmol Budhwar)
- Harvesting Piezoelectricity from Fluid Flow Interactions Using PVDF Patches (Ms. Sanchita Abrol)
- Design and Analysis of closed flow system for varying various parameters of Hydrodynamics for PEH (Mr. Nitin Yadav)
- Design and Analysis of Mechanism to Apply Periodic Dynamic Load on PVDF (Mr. Vikram Yadav)
- Blueprint of energy cultivation through piezoelectric material – A future of Green power generation. (Mr. Dinesh Yadav)
- Mechanobiology perspectives and cardiovascular fluid mechanics with machine learning – A tool for vascular diagnostics (Mr. Rajat Vashishtha)
- Improving the Tensile Strength of FDM 3D Printer Fabricated Parts using ANFIS (Akash Ahlawat)
- Optimization of FDM 3D printing process parameters for multi-material using Artificial Neural Network (Ashu Phogat)
- Optimazation the process parameter of FDM 3D printer using Taguchi method. 2019 (Mahesh Saini)

- Improvement in Mechanical Properties of 3D Printed Products Using FDM by Providing Inert Atmosphere During Fabrication. 2020 (Upender Punia)
- Analysis of fabrication of nylon filament by FDM 3-D printer in a closed Environment-2020 (Watan)
- Reverse Engineering Analysis of Human Anatomy using 3D Scanner. 2020 (Pardeep)
- Design & Fabrication of Various Components for Troubleshooting via FDM 3D Printing - 2021(Sachin).
- Polymer assisted additive manufacturing of multi-material: Studying effect of significant process parameters on wear assessment using Artificial Neural Network. 2021 (Anmol Sharma)
- Optimization of Significant Process Parameters of Hand-held 3D Scanning Process for Accurate Human Anatomy. 2021 (Ashish)
- Modelling and fabrication of SCARA Robot Arm for batter Dispenser (Hitesh 2022)
- Performance analysis of zirconia ceramic used in dentistry when exposed to acidic medium (Mannu 2022)
- Optimization of novel process parameters for the enhancement of mechanical properties of FDM-fabricated parts (Krishna Yadav-2023)
- Shivam Digitization of Maxillofacial Prosthesis process using Additive Manufacturing, 3D Scanning and Digital Tomography (Shivam-2023)
- Optimization of process parameters in FDM 3D Printing: enhancing mechanical properties and surface quality using RSM and ANN (Kunal-2024)
- Optimization of Process Parameters of FDM Fabricated Parts to Improve Fatigue Strength Using Hybrid Tool (Vipin-2025)

Ph.D. Supervision:

- Modelling and Simulation of Piezoelectric Energy Harvesting using Fluid Flow Dynamism (Dr. Jyoti Yadav- Awarded)
- Process parameters optimization of 3D Printing using hybrid algorithms to enhance the performance of functional parts (Dr. Sandeep Deshwal-Awarded)
- Topology and material optimization for developing Patient-specific limb orthosis using 3-d printing (Dr. Ashwani Kumar- Awarded)
- Mathematical modeling for interaction of Piezoelectric materials with fluid flow for energy harvesting (Dr. Mohit Yadav- Awarded)
- Experimental Investigations and Recuperating Mechanical Properties & Surface Topology of 3D Printed Parts by Using Hybrid Techniques” (Mr. Rajan-Awarded)
- Fabrication and performance analysis of 3D printable carbon-reinforced polymer nanocomposite (Mr. Akash Ahlawat-Awarded)
- Process Parameters Optimization of Medical Grade PEEK Material utilized for Fabrication of Cranio-Maxillofacial Prosthesis using Hybrid Algorithms (Mr. Ashish Phogat-Ongoing)
- Predictive Analytics for Supplier Performance Evaluation and Strategic Sourcing Decisions in Manufacturing Industries (Mr. Sumit Verma-Ongoing)
- Performance Analysis of 3D Printable Photopolymer Resins Reinforcing into Nanocomposites for Dental Applications (Ms. Nidhi-Ongoing)

11) Training / Course Attended:

1. National Conference on ‘Challenges for Technology and Management in Knowledge Millennium’ at J.I.E.T., Jind (2nd -3rd March,2006)
2. Refresher Course in “Research Methodology” Organized by Academic staff college, Kannur University, Kannur, Kerala (04th -24th Jan, 2012).
3. UGC Sponsored Orientation Course by Academic staff college, B.P.S. Mahila Vishwavidyalaya, Khanpur Kalan (Sonapat), Haryana (21st Nov.-18th Dec, 2012).
4. Short Term Course on ‘CAD-CAM Applications in NC/CNC Machines’ at IIT, Kharagpur, WB (23-27 sep. 2016)

5. Attended a Refresher Course on Environment Studies from 10Aug 2018 to 31 Aug 2018 in BPS Mahila Vishwavidyalaya Khanpur Gohana Sonipat
6. Attended a FDC on “Innovation and Research Methodology” from 9 to 18th feb 2019 in MDU Rohtak

13) Professional Activities:

(a) Chairmanship/ Invited Lecturers at National or International Conference/ Seminars / Workshops/Symposia/Courses/FDP etc.:

(b) Events Organized:

- Organizing Secretary of National Conference on Recent Developments in Mechanical Engineering organized at UIET, MDU Rohtak on November 20 – 21, 2015.
- Organizing Secretary of one day National Workshop on “Start-up, Innovation & Entrepreneurship” (Mar-6-2019) organized by IIC MDU at UIET, MDU Rohtak
- Course Co-coordinator of one week GIAN program on “Quality Control for products, processes or services” held during 22-27 July 2019.
 - Coordinator of National Level Awareness Programme by MSME development institute Karnal at UIET, MDU Rohtak on 20th feb 2020.
 - Coordinator of two weeks Entrepreneurship Awareness Program by MSME technology Center Rohtak at UIET, MDU Rohtak from 3rd march 2020 onward.
 - Coordinator of AICTE ATAL Faculty development programme on 3D Printing and Design ,organized by UIET on 23rd to 27th Nov, 2020
 - Coordinator of one day workshop on Build your own Low Cost Source Commercial 3D FDM Printer, organized by UIET on 4th Oct, 2021.
 - Convenor of the “Project exhibition 2022” of constituted for organization of “National Technology Day” on 11th May, 2022 and 12th may 2022 held in UIET MDU Rohtak
 - Co-coordinator of one day National workshop on Intellectual Property Rights (Patent, Design, Trademark and Geographical Indicators) organized by UIET MDU in association with NIPAM India on 27th May 2022.

(f) Research Paper Presented in Conference/ Seminars / Workshops/ Symposia etc.

- Deepak Chhabra “Design of piezoelectric smart structures with single input single output (SISO) system for Active vibration control” Proceedings of ‘Sports Biomechanics, Emerging Technologies & Quality Assurance in Technical education’ pp.133-140, March(2012), Prannath Parnami Institute of Management & Technology, Hisar.
- Pankaj Chandna, Gian Bhushan, Deepak Chhabra, Amit Nara, “Design and Optimization of Gantry Crane using Hyperworks” International Conference of HTC 2012, 17-18 July, Bangalore, India.
- *Deepak Chhabra, Gian Bhushan, Pankaj Chandna “Multilevel optimization for the placement of Piezo actuators on plate structures for active vibration control using modified heuristic genetic algorithm” Proc. SPIE. 9059, Industrial and Commercial Applications of Smart Structures Technologies 2014, 90590J, San Diego, California (March 10, 2014) doi: 10.1117/12.2044913*
- *Suresh K. Vashist, Deepak Chhabra “Optimal Placement of piezoelectric actuators on plate structures for active vibration control using genetic algorithm” ,Proc. SPIE. 9057, Active and Passive Smart Structures and Integrated Systems 2014, 905720. San Diego, California (March 09, 2014) doi: 10.1117/12.2044904*
- Deepak Chhabra “Experimental Investigations of PD Controller for AVC using Piezoelectric Sensors/Actuators” International Conference on Sustainable Computing Techniques in Engg. Science & Management SN education society, INDIA and URGCEE, USA at Hierank Business School, Noida, INDIA held during 9-10 sep 2016
- Deepak Chhabra “Experimental Investigations of LQG Controller for AVC using Piezoelectric

- Sensors/Actuators” 2nd International Conference on Sustainable Computing Techniques in Engg. Science & Management SN education society, INDIA and URGCEE, USA at Jain College of Engineering, Belagavi, INDIA during 27-28 Jan 2017.
- Deepak Chhabra “Design & analysis of closed flow system with varying various parameters of Hydrodynamics for PEH” International Conference on innovative research in Engg., Computers & Sciences Universal Research Foundation, Sharda University & Chirala Engineering College at Goa during 19-21 Jan 2018.
 - Deepak Chhabra “Performance Analysis of Piezo-Ceramic as Wearable Transducer for Efficient Energy Harvesting” International Conference on Sustainable Development-2018 Athens University of Economics and Business, International University of Sarajevo at Athens held during 11-15 April 2018
 - Deepak Chhabra, Rajan Garg ‘An innovative view of Shape Memory Alloys & its use in Robotics’ proceeding of ‘SMART MATERIAL’, pp. 161-178, July(2010) SDITM, Israna.
 - Deepak Chhabra, Gourve Goyal, Sukesh Babu “Design of Piezoelectric Smart Structures with Multi Input Multi Output(MIMO) System for Active Vibration Control” Proceedings of ‘Recent Trends in Mechanical Engineering’, pp. 127-136, Sep(2011), Lingaya’s University, Faridabad.
 - Lalit Bhardwaj, Amit Yadav, Deepak Chhabra “Static analysis of Rear Axle using CAE tool” Proceedings of ‘Recent Trends in Mechanical Engineering’, pp.146-153, Sep(2011), Lingaya’s University, Faridabad.
 - Deepak Chhabra “Optimal placement of Piezoelectric sensors-actuators on Beam like structure using genetic Algorithm” in ‘Advance in Computing Communication Network and Electrical System’, March(2012), UIET, MDU, Rohtak.
 - Mohit, Deepak Chhabra, Suresh Kumar, “Neural Network controllers/Adaptive Controllers for Active Vibration Control in Different Applications-A Review” in Advance in Computing Communication Network and Electrical System’, Feb(2014), UIET, MDU, Rohtak

(g) Attended/Participated in Academic Activities Conference/ Seminars / Workshops/ Symposia/ Orientation/Refresher Course etc.:

- National Conference on ‘Challenges for Technology and Management in Knowledge Millennium’ at J.I.E.T., Jind (2nd -3rd March,2006)
- Refresher Course in “Research Methodology” Organized by Academic staff college, Kannur University, Kannur, Kerala (04th -24th Jan, 2012).
- UGC Sponsored Orientation Course by Academic staff college, B.P.S. Mahila Vishwavidyalaya, Khanpur Kalan (Sonapat), Haryana (21st Nov.-18th Dec, 2012).
- Short Term Course on ‘CAD-CAM Applications in NC/CNC Machines’ at IIT, Kharagpur, WB (23-27 Sep. 2016)
- Refresher Course in Environment Studies(ID) UGC-HRDC, B.P.S. Mahila Vishwavidyalaya,Khanpur Kalan(Sonapat) 10-08-2018 to 31-08
- Faculty Development Programme on “Innovation and Research Methodologies” organized by Faculty Development Center MDU Rohtak during 09-19 Feb 2018.
- Participated in International Faculty development program on “Enhancing 21st century Teaching Andragogy” held at DCRUST Murthal during 14/02/2020 to 17/02/2020
- Faculty Development Programme on interdisciplinary refresher course organized by Faculty Development Centre, Maharshi Dayanand University, Rohtak, Haryana from 7-27 Jan, 2021.
- Participated in Workshop on “Roadblocks of circular economy practices in the Indian Manufacturing Industry” during 20/03/2021 to 21/03/2021 sponsored by London Metropolitan University, London.
- AICTE ATAL Faculty Development Programme on “Metal Additive Manufacturing” organized

by Visvesvaraya National Institute of Technology ,Nagpur from December 13, 2021 to December 17,2021.

(h) Guest/Expert Talk delivered:

- Attended International Conference on Innovative Research in Engineering and Science (IRES 2017) on 16-17 June 2017 at AIT Bangkok, Thailand as session chair and delivered lecture on “Finite element Method and Its Applications”.
- Invited talk on “Latest Trends in CAD/CAM/CAE” in International Conference on innovative research in Engg., Computers & Sciences organised by Universal Research Foundation & Sharda University in Goa held during 19 jan-21 jan 2018.
- Expert Talk on “Wonders of 3D Printing” at SGT University Gurugram on 8th april 2019.
- Expert talk on “Rapid Prototyping and 3D Printing” in TEQIP-III sponsored Short Term Course on “Advances in Computer Aided Manufacturing” organised by. UIET KUK held during 01-05 april 2019
- Expert talk on “Build your own open source low cost FDM 3D printer” in One day workshop on 04 Oct 2021 organised by UIET MDU Rohtak
- Expert talk on “Build your open source low cost FDM 3D printer” in AICTE ATAL FDP on 3D Printing & Design organised by Deenbandhu Chottu Ram University of Science & Technology, Sonapat ,Haryana during 22-26 November 2021
- Expert talk on “Fundamentals of FDM Printing” in AICTE ATAL FDP on 3D Printing & Design organised by College of Engineering, Pune during 29 Nov.-3 Dec. 2021
- Expert talk on Advances in FDM Printing in AICTE ATAL FDP on 3D Printing & Design organised by Central University of Jharkhand during 13 Jan. -17 Jan. 2022
- Expert talk on “Fundamentals of Additive Manufacturing” in One day workshop on 3D Printings organised by DPGITM, Gurugram on 4th May 2022.
- Expert talk on “Advances in 3D Printing” in One day workshop organised by incubation center, MDU Rohtak on 21st june 2022

14) Future Plans (Research & Academic): To empower the students with the newest tools/techniques so that they can innovate and benefit society, and industries, and start their own businesses.

- Create a center of excellence for CAD/CAM and additive manufacturing
- Acquire good projects and patents
- Quality publications and collaborations

15) Links/IDs:

ORCID ID: <https://orcid.org/0000-0002-3738-0153>

SCOPUS: <https://www.scopus.com/authid/detail.uri?authorId=56198514600>

Google Scholar: <https://scholar.google.com/citations?user=79j18lYAAAAJ&hl=en>

Publons: <https://publons.com/researcher/3263595/deepak-chhabra/>

Web of Science ResearcherID- [AAG-3845-2019](https://orcid.org/0000-0002-3738-0153)

Semantic Scholar Profile: <https://www.semanticscholar.org/author/38969987>

Kudos Pofile: https://www.growkudos.com/profile/deepak_chhabra

Researchgate Profile: https://www.researchgate.net/profile/Deepak_Chhabra5

National Library of Medicine: <https://www.ncbi.nlm.nih.gov/myncbi/deepak.chhabra.1/bibliography/public/>

Loop: <https://loop.frontiersin.org/people/1092550/overview>

Exaly: <https://exaly.com/author/4185471/deepak-chhabra/>

Website: chhabradeepak.in

16) List of Publications:

List of Publications (SCI/Scopus)

- Kashyap V., Bhardwaj D., Gwal R., Sahdev R.K., Dhingra A.K., Chhabra D. “Design- and Data-Driven Approach with FEA Framework to Enhance the Tensile–Tensile Fatigue Strength of FDM-Fabricated PETG Components” (2026) *Journal of Materials Engineering and Performance*, 35 (28), pp. 28551 – 28567. DOI: 10.1007/s11665-026-14046-z
- Narang R., Rohilla S., Dhingra A.K., Sahdev R.K., Chhabra D. “ Enhancing the Fatigue Strength of FDM Fabricated ABS Parts by Optimizing the Kinematic and Directional Dependent Process Parameters (2026) *Proceedings of the National Academy of Sciences India Section A - Physical Sciences* DOI: 10.1007/s40010-026-00992-9
- Tiwari D., Gupta G.K., Chhabra D., Shukla P. “Artificial intelligence tools for AgNP-SSB-SN and AgNP-CSS-SN biosynthesis from *Synechococcus* PCC 11901 and *Chlorella sorokiniana* MSP1 for hazardous dyes remediation” (2026) *Scientific Reports*, 16 (1), art. no. 13699 DOI: 10.1038/s41598-026-40621-4
- Phogat A., Ahlawat A., Singh V., Chhabra D. “ Enhancing Mechanical Performance of FFF-Fabricated PEEK Using an Integrated GA–ANN and FEA for Mandible Fracture Application” (2026) *Computers, Materials and Continua*, 88 (3), art. no. 70. DOI: 10.32604/cmc.2026.080735
- Ahlawat A., Phogat A., Punia U., Garg R.K., Sahdev R.K., Chhabra D. “Hybrid RSM-ANFIS modeling for concurrent optimization of fused filament fabrication and graphene content in high-performance PLA nanocomposites” (2026) *Journal of Composite Materials* DOI: 10.1177/00219983261478399
- Rathee S., Nabi S., Srivastava M., Gautam R.K.S., Kaushik A., Kumar P., Chhabra D., Kumar A., Najar F.A., Radu M.S., Patel V. “Advanced synthesis and multifaceted characterization of Al-Mg alloy foams reinforced with TiH₂ incorporation through friction stir processing”, (2026) *Scientific Reports*, 16 (1), art. no. 11568 DOI: 10.1038/s41598-026-38973-y
- Gwal R., Bhardwaj D., Kumar J., Kashyap V., Rathee S., Chhabra D. “Modelling and analysis of fatigue strength of bilayer ABS-PETG fabricated via FFF using FEA framework and hybrid algorithm (2026) *Journal of Thermoplastic Composite Materials*, 39 (10), pp. 6115 – 6133 DOI: 10.1177/08927057261438720
- Sangwan M., Sahdev R.K., Tiwari S., Chhabra D., Suhag S., Kumari M., Sahdev A., Sustainable Indoor Convection Drying of Banana Slices: Kinetics and Model Validation, 2025 *Journal of Food Process Engineering*, 48 (12), art. no. e70285. DOI: 10.1111/jfpe.70285
- Akash Ahlawat; Ashish Phogat; Rajan Narang; Ravinder Kumar Sahdev; Sandeep Rathee; Deepak Chhabra (2025) “Enhancing Tensile-Tensile Fatigue Performance of FDM-Fabricated Carbon Fiber-Nylon Composites Using GA-ANFIS Optimization” *Journal of Mechanical Science and Technology*
- Ahlawat A., Phogat A., Punia U., Chhikara A., Dhingra A.K., Garg R.K., Sahdev R.K., Chhabra D., Innovative Optimization of Mechanical Performance in Carbon Fiber-Reinforced Nylon Composite Using Artificial Neural Networks and Multi-Objective Genetic Algorithms, 2025 *Journal of Materials Engineering and Performance*, 34 (20), pp. 23031 - 23044. DOI: 10.1007/s11665-025-10973-5
- Bhagat, N., Gupta, G.K., Minhas, A.K. *et al.* Artificial Neural Network – Multi-Objective Genetic Algorithm based optimization for the enhanced pigment accumulation in *Synechocystis* sp. PCC 6803. *BMC Biotechnol* **25**, 23 (2025). <https://doi.org/10.1186/s12896-025-00955-9>
- Kumar, P., Dhingra, A.K., Chhabra, D. *et al.* Enhancement of Mustard Oil Bio-Diesel Yield Using Evolutionary Algorithms. *J. Inst. Eng. India Ser. E* **106**, 69–83 (2025). <https://doi.org/10.1007/s40034-024-00300-3>
- Akash Ahlawat; Ashish Phogat; Upender Punia; Watan Pal; Ravinder Kumar Sahdev; Deepak Chhabra Investigation of mechanical and morphological properties of 3D-printed GR-PLA nanocomposites with process parameter optimization using MOGA-ANN. *Prog Addit Manuf* (2025). <https://doi.org/10.1007/s40964-025-01322-y>
- Ahlawat A, Phogat A, Punia U, Chhikara A, Sahdev RK, Chhabra D (2025;), “Optimization of FDM 3D printing parameters for enhancing mechanical performance of carbon fiber-reinforced ABS composite through PSO-ANN”. *Engineering Computations*, Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/EC-07-2025-0701>

- Guddu Kumar Gupta, Tallon Cox, Eetika Chot, Rajeev Kumar Kapoor, Deepak Chhabra, Nishi Kant Bhardwaj, Rajeev K. Azad, Pratyosh Shukla, Improved GA-ANN based optimized bio-deinking strategy for laccase produced from *Trametes versicolor* GGRK18, and its gene co-expression network analysis, *Journal of Environmental Chemical Engineering*, Volume 13, Issue 6, 2025, 119688, ISSN 2213-3437, <https://doi.org/10.1016/j.jece.2025.119688>.
- Aditya Sharma, Guddu Kumar Gupta, Deepak Chhabra, Piyush Pandey, Pratyosh Shukla (2025) "Enhanced indole-3-acetic acid production by *Enterobacter hormaechei* APSB3 through heuristic artificial neural network and particle swarm optimization" *Environmental Sustainability*
- Pardeep Kumar, Sunita Dhingra, Ashwani Kumar Dhingra, Deepak Chhabra and Ashish Chhikara (2025) "Optimizing the Yield of Neem Oil Biodiesel Using Response Surface Methodology and Grey Wolf Optimization" *International Journal of Oil, Gas and Coal Technology*
- FAROOZ NAJAR; Sandeep Rathee; Manu Srivastava; Deepak Chhabra (2025) "Surface Modification and Properties Enhancement of AA6082 Using Multi-Pass Friction Stir Processing" *Metals and Materials International*, 20 February
- Rajan Narang; Akash Ahlawat; Ashwani Kumar Dhingra; Ravinder Kumar Sahdev; Deepak Chhabra, (2025) "Optimization of Process Parameters to Investigate the Fatigue Behavior of Fused Deposition Modeling-Fabricated ABS Parts Using Hybrid Tool" *Journal of Materials Engineering and Performance*,
- Manu Rathee; Sarthak Singh Tomar; Deepak Chhabra; Pritish Dixit (2025) "Digital workflow for fabricating a nasal apex-columella prosthesis with an integrated custom nasal stent" *The Journal of Prosthetic Dentistry*.
- Govind Vashishtha; Sumika Chauhan; Nitin Yadav; Deepak Chhabra; Munish Kumar Gupta; Rajesh Kumar; Zhixiong Li (2025) "Shaping the future: latest developments in 3D printing stimuli-responsive soft polymers" *International Journal of Advanced Manufacturing Technology*, Volume 136, pages 4215–4237,
- Manisha, Sumit Tiwari, Ravinder Kumar Sahdev, Deepak Chhabra, Meena Kumari, Arshad Ali, Ravin Sehrawat, Prabhakar Tiwari (2025) "Advancements and challenges in battery thermal management for electric vehicles" *Renewable and Sustainable Energy Reviews*, Volume 209, 115089.
- Shazman Nabi, Manu Srivastava, Mohammad Farooq Wani, Sandeep Rathee, Deepak Chhabra, (2025) "Exploring tribological and corrosion properties of Al-5052/SiC+CeO₂ hybrid surface composites fabricated using friction stir processing" *Tribology International*, Volume 201, 110176, ISSN 0301-679X,
- Anubhuti Kawatra, Rakhi Dhankhar, Bharti Datten, Shweta Dhankhar, Deepak Chhabra, Pooja Gulati (2024) "Integrated neural network and PSO hybrid approach for production of citrulline using immobilized permeabilized *Pseudomonas furukawaii*" *Letters in Applied Microbiology*, Volume 77, Issue 12, ovael11, <https://doi.org/10.1093/lambio/ovael11>
- Chhikara, A., Dhingra, A.K., Chhabra, D., Kumar, P. "Optimization of biodiesel production of *spirulina-platensis* algae biomass using RSM integrated with whale optimization algorithm" *Indian Journal of Engineering and Materials Sciences*, 2024, 31(5), pp. 750–758
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