

# Dr. Vinay Kumar Patel

## Professor

### Present Position:

- **Designation:** Professor in Department of Mechanical Engineering
- **Organization:** Govind Ballabh Pant Institute of Engineering & Technology Pauri Garhwal



## Work History

2021-07 -  
Current

### Professor

*G. B. Pant Institute of Engineering & Technology, Pauri Garhwal  
(Uttarakhand), India*

Area : Mechanical Engineering

2018-07 -  
2021-07

### Associate Professor

*G. B. Pant Institute of Engineering & Technology, Pauri Garhwal  
(Uttarakhand), India*

Area : Mechanical Engineering

2005-07 -  
2018-07

### Assistant Professor

*G. B. Pant Institute of Engineering & Technology, Pauri Garhwal  
(Uttarakhand), India*

Area : Mechanical Engineering

2001-10 -  
2005-06

### Guest Lecturer

*M.M.M. Engineering College, Gorakhpur (Uttar Pradesh)*

Area : Mechanical Engineering



## Contact

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## Education

2010-07 -  
2015-07

### Ph.D.: Mechanical

*Indian Institute of Technology Kanpur - Uttar Pradesh*

**Ph.D. Thesis:** Nanofabrication and Combustion Characterization of Highly Energetic Metal Oxide/Nano Aluminum Composites for Pyrotechnics and Gene Transfection Applications.

**Ph.D. Advisor:** Dr. Shantanu Bhattacharya, Professor, MED, IIT Kanpur

1999-07 -  
2001-02

### M. Tech: Welding Engineering

*Indian Institute of Technology Roorkee - Uttarakhand*

1995-07 -  
1999-06

### B. E.: Mechanical Engineering

*Madan Mohan Malviya Engineering College Gorakhpur - Uttar Pradesh*

(Currently Madan Mohan Malviya University of Technology, Gorakhpur)



## Skills

- Heartfulness Certified Meditation Trainer

**A). Papers in Refereed Journals :**

1.

**Author(s) :** M Chauhan, S Kumar, A Kalra, A Bisht, KKS Mer, VK Patel

**Indexing & SCIE Impact Factor :** SCIE (IF:5.323)

**Title :** Grey-Taguchi optimization of mechanical and abrasive wear properties for cotton grass fiber reinforced epoxy composites

**Complete Reference of Journal :** Journal of Natural Fibers  
<https://doi.org/10.1080/15440478.2022.2039832>

2.

**Author(s) :** Priya, M K Gupta, V K Patel

**Indexing & SCIE Impact Factor :** Scopus

**Title :** Effect of carbonitriding on tribomechanical and corrosion-resistant properties of friction stir welded aluminum 2024 alloy

**Complete Reference of Journal :** Strojnicky casopis–Journal of Mechanical Engineering 71 (2021) 199–212

3.

**Author(s) :** P S Kumar, L Prasad, VK Patel, A Kumain, A Yadav

**Indexing & SCIE Impact Factor :** SCIE (IF:3.171)

**Title :** Experimental and numerical study on physico-mechanical properties and Taguchi's designed abrasive wear behavior of hemp/nettle-polyester hybrid composite

**Complete Reference of Journal :** Polymer Composites 42 (2021) 6912–6927

4.

**Author(s) :** S Kumar, L Prasad, V K Patel, V Kumar, A Kumar, A Yadav

**Indexing & SCIE Impact Factor :** SCIE (IF:5.323)

**Title :** Physico-Mechanical Properties and Taguchi Optimized Abrasive Wear of Alkali treated and Fly Ash Reinforced Himalayan Agave Fiber Polyester Composite

**Complete Reference of Journal :** Journal of Natural Fibers  
<https://doi.org/10.1080/15440478.2021.1982818>

5.

**Author(s) :** P K Arya, N K Jain, J Murugesan, V K Patel\*

**Indexing & SCIE Impact Factor :** SCIE (IF:2.87)

**Title :** Development in Friction Stir Welding of Aluminium and Magnesium alloy

**Complete Reference of Journal :** Journal of Adhesion Science and Technology DOI: 10.1080/01694243.2021.1975614

6.

**Author(s) :** V K Patel\*, A Gupta

**Indexing & SCIE Impact Factor :** SCIE (IF:2.356)

**Title :** Facile synthesis of CuO nanobricks for high combustion characteristics with nanoaluminum and catalytic thermal decomposition of lithium perchlorate

**Complete Reference of Journal :** Particulate Science and Technology 39 (2021) 790–796

7.

**Author(s)** : A Gupta, V K Patel, C Pandey

**Indexing & SCIE Impact Factor** : Elsevier

**Title** : Functional characterization of nano-porous silicate-polymer composite for bovine serum albumin immobilization

**Complete Reference of Journal** : Sensor International 2 (2021) 100080

8.

**Author(s)** : S Kumar, L Prasad, V K Patel, V Kumar, A Kumar, A Yadav, J Winczek

**Indexing & SCIE Impact Factor** : SCIE (IF:4.329)

**Title** : Physical and Mechanical Properties of Natural Leaf Fiber-Reinforced Epoxy Polyester Composites

**Complete Reference of Journal** : Polymer 13 (2021) 1369

9.

**Author(s)** : S Chauhan, J K Katiyar, V K Patel\*

**Indexing & SCIE Impact Factor** : Scopus

**Title** : Physico-tribo-mechanical performance and multi-criteria ranking optimization of novel Eriphorium-comosum/polyester composites

**Complete Reference of Journal** : International Journal of Computer Aided Engineering and Technology 15 (2021) 538-552

10.

**Author(s)** : V K Patel\*, A Joshi, S Kumar, A S Rathaur, J K Katiyar

**Indexing & SCIE Impact Factor** : SCIE (IF:3.512)

**Title** : Molecular Combustion Properties of Nanoscale Aluminum and Its Energetic Composites: A Short Review

**Complete Reference of Journal** : ACS Omega 6 (2021) 17-27

11.

**Author(s)** : S Bahuguna, P K Arya, VK Patel\*

**Indexing & SCIE Impact Factor** : Scopus

**Title** : Mechanical and Abrasive Wear Properties of Friction Stir Welded Joints of Aluminum Alloy AA6061-T6 with/Without Nickel Coating

**Complete Reference of Journal** : Strojnícky časopis–Journal of Mechanical Engineering 70 (2020) 21-36

12.

**Author(s)** : N Kumar, V K Patel\*

**Indexing & SCIE Impact Factor** : Scopus & ESCI

**Title** : Effect of SiC/Si<sub>3</sub>N<sub>4</sub> micro-reinforcement on mechanical and wear properties of friction stir welded AA6061-T6 aluminum alloy

**Complete Reference of Journal** : SN Applied Sciences 2 (2020) 1-11

13.

**Author(s)** : A. Bisht, B. Gangil, VK Patel\*

**Indexing & SCIE Impact Factor** : ESCI & Scopus

**Title** : Selection of blowing agent for metal foam production: A review

**Complete Reference of Journal** : Journal of Metals, Materials and Minerals 30 (2020) 1-10

14.

**Author(s)** : S Kumar, K KS Mer, B Gangil, V K Patel\*

**Indexing & SCIE Impact Factor** : SCIE (IF:3.172)

**Title** : Synergistic effect of hybrid Himalayan Nettle/Bauhinia-

vahlii fibers on physico-mechanical and sliding wear properties of epoxy composites

**Complete Reference of Journal** : Defense Technology 16 (2020) 762-776

15.

**Author(s)** : A S Rathaur, J K Katiyar, V K Patel

**Indexing & SCIE Impact Factor** : SCIE (IF: 6.167)

**Title** : Thermo-mechanical and tribological properties of SU-8/h-BN Composite with SN150/ perfluoropolyether as filler

**Complete Reference of Journal** : Friction 8 (2020) 151-163

16.

**Author(s)** : S Kumar, L Prasad, S Kumar, V K Patel

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Physicomechanical and Taguchi optimized abrasive wear behavior of KOH/KMnO<sub>4</sub>/NaHCO<sub>3</sub> treated Himalayan Agave fiber reinforced polyester composite

**Complete Reference of Journal** : Materials Research Express 6 (2020) 115353

17.

**Author(s)** : A S Rathaur, V K Patel, J K Katiyar

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Tribo-mechanical properties of graphite/talc modified polymer composite bearing balls

**Complete Reference of Journal** : Materials Research Express 7 (2019) 015305

18.

**Author(s)** : A. Joshi, K. K. S. Mer, J.K., Katiyar, V.K. Patel\*

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Effect of azobis-isobutyronitrile propellant loading and nanoscaling of CuO on combustion performance of CuO/Al nanoenergetic materials

**Complete Reference of Journal** : Materials Research Express 6 (2019) 115062

19.

**Author(s)** : A S Negi, J K Katiyar, S Kumar, N Kumar, V K Patel\*

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Physicomechanical and abrasive wear properties of hemp/Kevlar/carbon reinforced hybrid epoxy composites

**Complete Reference of Journal** : Materials Research Express 6 (2019)115304

20.

**Author(s)** : VK Patel, R Kant, G Bhatt, A Ganguli, D Singh, M Nayak, K Mishra, A Gupta, K Gangopadhyay, S Gangopadhyay, G Ramanathan, S Bhattacharya

**Indexing & SCIE Impact Factor** : SCIE (IF:3.512)

**Title** : Synchronized Electromechanical Shock Wave-Induced Bacterial Transformation

**Complete Reference of Journal** : ACS Omega 4 (2019) 8512-8521

21.

**Author(s)** : A Bisht, B Gangil, V K Patel\*

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Physico-compression, sliding wear and energy absorption properties of Zn/Mg infiltrated closed cell aluminum foam

**Complete Reference of Journal** : Materials Research Express 6  
(2019) 106583

22.

**Author(s)** : S Kumar, L Prasad, S Kumar, V K Patel\*

**Indexing & SCIE Impact Factor** : SCIE (IF: 5.039)

**Title** : Physico-mechanical and Taguchi-designed sliding wear properties of Himalayan agave fiber reinforced polyester composite

**Complete Reference of Journal** : Journal of Materials Research and Technology 8 (2019) 3662-3671

23.

**Author(s)** : S Kumar, V K Patel, K K S Mer, B Gangil, T Singh, G Feklete

**Indexing & SCIE Impact Factor** : SCIE (IF:5.323)

**Title** : Himalayan Natural Fiber-Reinforced Epoxy Composites: Effect of Grewia optiva/Bauhinia Vahlia Fibers on Physico-mechanical and Dry Sliding Wear Behavior

**Complete Reference of Journal** : Journal of Natural Fibers, 18 (2021) 192-202

24.

**Author(s)** : S Kumar, K K S Mer, B Gangil, V K Patel\*

**Indexing & SCIE Impact Factor** : SCIE (IF: 5.039)

**Title** : Synergy of rice-husk filler on physico-mechanical and tribological properties of hybrid Bauhinia-vahlia/sisal fiber reinforced epoxy composites

**Complete Reference of Journal** : Journal of Materials Research and Technology 8 (2019) 2070-2082

25.

**Author(s)** : J K Katiyar, V K Patel\*

**Indexing & SCIE Impact Factor** : ESCI & Scopus

**Title** : Physico-tribo-mechanical and adhesion behavior of plasma-treated steel and its alloys

**Complete Reference of Journal** : Reviews of Adhesion and Adhesives 7 (2019)1-32

26.

**Author(s)** : V K Patel, R Kant, A Choudhary, M Painuly, S Bhattacharya

**Indexing & SCIE Impact Factor** : SCIE (IF:3.172)

**Title** : Performance characterization of Bi<sub>2</sub>O<sub>3</sub>/Al nanoenergetics blasted micro-forming system

**Complete Reference of Journal** : Defense Technology, 15 (2019) 98-105

27.

**Author(s)** : A S Rathaur, J K Katiyar, VK Patel, S Bhaumik, A K Sharma

**Indexing & SCIE Impact Factor** : SCIE (IF: 1.178)

**Title** : A Comparative Study of Tribological and Mechanical Properties of Composite Polymer Coatings on Bearing Steel

**Complete Reference of Journal** : International Journal of Surface Science & Engineering 12 (2018) 379-401

28.

**Author(s)** : S Kumar, V K Patel, K K S Mer, G Fekete, B Gangil, T Singh

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Influence of woven bast-leaf hybrid fiber on physico-mechanical and sliding wear performance of epoxy based polymer composites

**Complete Reference of Journal** : Materials Research Express 5 (2018) 105705

29.

**Author(s)** : V K Patel\*, S Chauhan, J. K. Katiyar

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Physico-mechanical and wear properties of novel sustainable sour-weed fiber reinforced polyester composites

**Complete Reference of Journal** : Materials Research Express 5 (2018) 045310.

30.

**Author(s)** : V K Patel\*, P Kumar, S Bhattacharya

**Indexing & SCIE Impact Factor** : ESCI

**Title** : Mechanical, Microstructural and Sliding Wear Properties of Friction Stir Welded AA6063-T6 and AA5052-H32 Aluminium Alloys

**Complete Reference of Journal** : Materials Focus 7 (2018) 50-58.

31.

**Author(s)** : V K Patel\*, S Bhattacharya

**Indexing & SCIE Impact Factor** : SCIE (IF:1.620)

**Title** : Solid state green synthesis and catalytic activity of CuO nanorods in thermal decomposition of potassium periodate

**Complete Reference of Journal** : Materials Research Express 4 (2017) 095012.

32.

**Author(s)** : V K Patel\*, N Rawat

**Indexing & SCIE Impact Factor** : SCIE (IF:7.053)

**Title** : Physico-mechanical properties of sustainable Sagwan-Teak Wood Flour/Polyester Composites with/without gum rosin

**Complete Reference of Journal** : Sustainable Materials and Technologies, 13 (2017) 1-8.

33.

**Author(s)** : V K Patel\*, K Rani

**Indexing & SCIE Impact Factor** : Scopus

**Title** : Mechanical and Wear Properties of Friction Stir Welded 0-6Wt% nAl<sub>2</sub>O<sub>3</sub> Reinforced Al-13Wt% Si Composites

**Complete Reference of Journal** : Strojnicky casopis-Journal of Mechanical Engineering 67 (2017) 77-86.

34.

**Author(s)** : V K Patel\*, S Bhowmik

**Indexing & SCIE Impact Factor** : ESCI & Scopus

**Title** : Plasma Processing of Aluminum Alloys to Promote Adhesion: A Critical Review

**Complete Reference of Journal** : Reviews of Adhesion and Adhesives 5 (2017) 79-104.

35.

**Author(s)** : V K Patel\*, P Sundriyal, S Bhattacharya

**Indexing & SCIE Impact Factor** : SCIE (IF:2.356)

**Title** : Aloe-vera vs. poly(ethylene)glycol-based synthesis and relative catalytic activity investigations of ZnO nanorods in

thermal decomposition of potassium perchlorate  
**Complete Reference of Journal** : Particulate Science and  
Technology, 35 (2017) 361-368

**36.**

**Author(s)** : A Gupta, V K Patel, R Kant, S Bhattacharya

**Indexing & SCIE Impact Factor** : ESCI & Scopus

**Title** : Surface Modification Strategies for Fabrication of Nano-  
biodevices

**Complete Reference of Journal** : Reviews of Adhesion and  
Adhesives 4 (2016) 166-191

**37.**

**Author(s)** : V K Patel\*, A Dhanola

**Indexing & SCIE Impact Factor** : SCIE (IF:5.09)

**Title** : Surface Modification Strategies for Fabrication of Nano-  
biodevices

**Complete Reference of Journal** : Engineering Science and  
Technology, an International Journal 19 (2016) 676-683.

**38.**

**Author(s)** : V K Patel, A Gupta, D Singh, R Kant, S Bhattacharya

**Indexing & SCIE Impact Factor** : ESCI & Scopus

**Title** : Surface Functionalization to Mitigate Fouling of  
Biodevices: A Critical Review

**Complete Reference of Journal** : Reviews of Adhesion and  
Adhesives 3 (2015) 444-478.

**39.**

**Author(s)** : V K Patel, J R Saurav, K Gangopadhyay, S  
Gangopadhyay, S Bhattacharya

**Indexing & SCIE Impact Factor** : SCIE (IF:3.36)

**Title** : Combustion characterization and modeling of novel  
nanoenergetic Composites of Co<sub>3</sub>O<sub>4</sub>/nAl

**Complete Reference of Journal** : RSC Advances 5 (2015) 21471-  
21479.

**40.**

**Author(s)** : V K Patel, A Ganguli, R Kant, S Bhattacharya

**Indexing & SCIE Impact Factor** : SCIE (IF:3.36)

**Title** : Micropatterning of nanoenergetic films of Bi<sub>2</sub>O<sub>3</sub>/nAl for  
Pyrotechnics

**Complete Reference of Journal** : RSC Advances 5 (2015) 14967-  
14973.

**41.**

**Author(s)** : V K Patel, S Bhattacharya

**Indexing & SCIE Impact Factor** : SCIE (IF:9.229)

**Title** : High-Performance nanothermite composites based on  
Aloe vera-directed CuO nanorods

**Complete Reference of Journal** : ACS applied materials &  
interfaces 5 (2013) 13364-13374.

**42.**

**Author(s)** : V K Patel

**Indexing & SCIE Impact Factor** : SCI (IF:3.061)

**Title** : Sonoemulsion synthesis of long CuO nanorods with  
enhanced catalytic thermal decomposition of potassium  
perchlorate

**Complete Reference of Journal** : Journal of Cluster Science 24

43.

**Author(s)** : P K Ghosh, V K Patel

**Indexing & SCIE Impact Factor** : SCIE (IF:4.616)

**Title** : Resistance spot repair welding of spot welded steel sheet

**Complete Reference of Journal** : Materials and manufacturing processes 20 (2005) 187-204

**B). Papers published in Conference Proceedings :**

1.

**Author(s)** : MK Gupta, B Gangil, L Ranakoti, PK Rakesh, VK Patel

**Proceedings/Vol. (Year) Page No.** : Advances in Engineering Design (2021) 137-147

**Title** : Effects of Tool Pin Profiles on Mechanical Properties of Al/TiB<sub>2</sub> Surface Composite Fabricated by Friction Stir Process

2.

**Author(s)** : S Tejyan, N K Baliyan, V K Patel, A Patnaik, T Singh

**Proceedings/Vol. (Year) Page No.** : Materials Today Proceeding, 44 (2021) 4767-4769

**Title** : Polymer green composites reinforced with natural fibers: A comparative study

3.

**Author(s)** : AS Rathaur, JK Katiyar, VK Patel

**Proceedings/Vol. (Year) Page No.** : IOP Conference Series: Materials Science and Engineering 653 (2019), 012033

**Title** : Experimental analysis of mechanical and structural properties of hybrid aluminium (7075) matrix composite using stir casting method

4.

**Author(s)** : S Kumar, Y Kumar, B Gangil, V K Patel\*

**Proceedings/Vol. (Year) Page No.** : Materials Today Proceeding, 4 (2017) 10144-10147

**Title** : Effects of agro-waste and bio-particulate fillers on mechanical and wear properties of Sisal fiber based polymer composites

5.

**Author(s)** : S Kumar, B Gangil, L Prasad, V K Patel\*

**Proceedings/Vol. (Year) Page No.** : Materials Today Proceeding, 4 (2017) 9576-9580.

**Title** : A Review on Mechanical Behavior of Bast-Glass Fibers Based Hybrid Polymer Composites

6.

**Author(s)** : V K Gautam, A Kumar, L Prasad, V K Patel

**Proceedings/Vol. (Year) Page No.** : Materials Today Proceeding, 4 (2017) 9879-9882.

**Title** : An Experimental Investigation on Slurry Erosion Wear Characteristics of Brass Alloy

7.

**Author(s)** : S Kumar, B Gangil, V K Patel\*

**Proceedings/Vol. (Year) Page No.** : AIP Proceeding 1728 (1), 020120, 2016



**Title :** Physico-Mechanical and Tribological properties of Grewia-Optiva Fiber/Bio-Particulates hybrid polymer composites

**8.**

**Author(s) :** V K Patel, S Chauhan, A Sharma

**Proceedings/Vol. (Year) Page No. :** AIP Proceeding 1728 (1), 020269, 2016

**Title :** Investigations of Mechanical and Wear Properties of Alumina/Titania/Fire-Clay Reinforced Epoxy Composites

**9.**

**Author(s) :** M Painully, V K Patel\*, S Bhattacharya

**Proceedings/Vol. (Year) Page No. :** AIP Proceeding 1728 (1), 020120, 2016

**Title :** Influence of MnC<sub>2</sub>O<sub>4</sub> Microadditives on Combustion Characteristics of CuO/Al Nanoenergetics

**10.**

**Author(s) :** V K Patel, S Bhattacharya

**Proceedings/Vol. (Year) Page No. :** AIP Proceeding 1536 (1), 1322-1323, 2013

**Title :** Effect of oxidizer morphology on Combustion Characteristics of Nanoenergetic Materials of CuO/Al

#### **C) Books Published as Editor: 04**

##### **1. Trends in Application of Polymers and Polymer Composites**

(Ed. V K Patel, R Kant, P S Chauhan, S Bhattacharya) **AIP Publishing** LLC AIP Publishing Melville, New York ( In Press)

##### **2. Trends in Fabrication of Polymers and Polymer Composites**

(Ed. V K Patel, R Kant, P S Chauhan, S Bhattacharya) **AIP Publishing** LLC AIP Publishing Melville, New York  
(<https://doi.org/10.1063/9780735423916>) 2022

**3. Automotive Tribology** (Editors: J K Katiyar, S Bhattacharya, V K Patel, V Kumar) **Springer Nature** Singapore (ISBN 978-981-15-0434-1) 2020

**4. Nano-Energetic Materials** (Ed. S Bhattacharya, A K Agarwal, T Rajagopalan, V K Patel) **Springer Nature** Singapore, (ISBN 978-981-13-3268-5) 2019

#### **D). Book Chapters :**

**1.**

**Author(s) :** R Kant, P S Chauhan, V K Patel, S Bhattacharya

**Year :** 2022

**Title :** Introduction to fabrication of Polymers and Polymeric composites

**Editor & Publisher :** AIP Publishing LLC AIP Publishing Melville, New York

**2.**

**Author(s) :** A Kumar, U Panda, V K Patel, R Kant

**Year :** 2022

**Title :** Laser-Assisted Fabrication of Polymer by Pushing Down the Limit of Resolution

**Editor & Publisher** : AIP Publishing LLCAIP PublishingMelville,  
New York

3.

**Author(s)** : R Kant, V K Patel, G Bhatt, Shantanu Bhattacharya

**Year** : 2022

**Title** : Advances in polymer materials and composites for additive manufacturing

**Editor & Publisher** : AIP Publishing LLCAIP PublishingMelville,  
New York

4.

**Author(s)** : G Bhatt, V K Patel, R Kant, S Bhattacharya

**Year** : 2022

**Title** : Polymer microfabrication for biomedical Applications

**Editor & Publisher** : AIP Publishing LLCAIP PublishingMelville,  
New York

5.

**Author(s)** : S Kumar, G Bhatt, R Kant, V K Patel

**Year** : 2022

**Title** : Extraction, Fabrication and Mechanical Aspects in Composites of Bamboo Fiber

**Editor & Publisher** : AIP Publishing LLCAIP PublishingMelville,  
New York

6.

**Author(s)** : S Kesarwani, V K Patel, V K Singh, R K Verma

**Year** : 2022

**Title** : Recent trends in the manufacturing of reduced Graphene oxide modified epoxy nanocomposites as advanced functional material

**Editor & Publisher** : AIP Publishing LLCAIP PublishingMelville,  
New York

7.

**Author(s)** : S Kumar, R K Verma, A Kumar, V K Patel

**Year** : 2022

**Title** : Importance of Chemically Treated of Natural Fibers in Fabrication of enhanced-Performance Natural Fiber Reinforced Composites of Polymer

**Editor & Publisher** : AIP Publishing LLCAIP PublishingMelville,  
New York

8.

**Author(s)** : S Kumar, B Gangil, KKS Mer, MK Gupta, VK Patel

**Year** : 2020

**Title** : Bast Fiber-Based Polymer Composites

**Editor & Publisher** : Hybrid Fiber Composites: Materials, Manufacturing, Process Engineering (2020): 147-167. Wiley-VCH Verlag GmbH

9.

**Author(s)** : A S Rathaur, V K Patel, J K Katiyar

**Year** : 2020

**Title** : Introduction and Applications of Tribology

**Editor & Publisher** : Tribology in Materials and Applications (pp. 1-14). Springer, Cham.

10.

**Author(s)** : A S Rathaur, V K Patel, J K Katiyar

**Year** : 2020

**Title** : Tribo-mechanical Aspects in Micro-electro Mechanical Systems (MEMS)

**Editor & Publisher** : Tribology in Materials and Applications (pp. 243-259). Springer, Cham.

11.

**Author(s)** : J K Katiyar, S Bhattacharya, V K Patel, V Kumar

**Year** : 2019

**Title** : Introduction to automotive tribology

**Editor & Publisher** : Automotive Tribology, (Ed. J K Katiyar, S Bhattacharya, V K Patel, V Kumar) **Springer Nature** Singapore (ISBN 978-981-15-0434-1)

12.

**Author(s)** : S K Verma, A Gupta, V K Patel, B Gangil, L Ranikoti

**Year** : 2019

**Title** : The Potential of Natural fibers for Automotive Sector

**Editor & Publisher** : Automotive Tribology, (Ed. J K Katiyar, S Bhattacharya, V K Patel, V Kumar) **Springer Nature** Singapore (ISBN 978-981-15-0434-1)

13.

**Author(s)** : A Bisht, V K Patel, B Gangil

**Year** : 2019

**Title** : Future of Metal Foam Materials in Automotive Industry

**Editor & Publisher** : Automotive Tribology, (Ed. J K Katiyar, S Bhattacharya, V K Patel, V Kumar) **Springer Nature** Singapore (ISBN 978-981-15-0434-1)

14.

**Author(s)** : M K Pathak, A Joshi, K K S Mer, J K. Katiyar, V K Patel\*

**Year** : 2019

**Title** : Potential of Bio-lubricants in Automotive Tribology

**Editor & Publisher** : Automotive Tribology, (Ed. J K Katiyar, S Bhattacharya, V K Patel, V Kumar) **Springer Nature** Singapore (ISBN 978-981-15-0434-1) 2019, 197-214.

15.

**Author(s)** : S. Kumar, B. Gangil, K. K. S. Mer, D. Biswas, V. K. Patel,

**Year** : 2019

**Title** : Asbestos Free Braking Pads by Using Organic Fiber Based Reinforced Composites for Automotive Industries

**Editor & Publisher** : Automotive Tribology, (Ed. J K Katiyar, S Bhattacharya, V K Patel, V Kumar) **Springer Nature** Singapore (ISBN 978-981-15-0434-1) 2019, 327-343.

16.

**Author(s)** : S Bhattacharya, AK Agarwal, VK Patel, TR Gopalan, AK Basu, A Saha

**Year** : 2019

**Title** : Introduction to Nano-energetic Materials

**Editor & Publisher** : Nano-Energetic Materials (Ed. S. Bhattacharya et al.) **Springer Nature** Singapore, (ISBN 978-981-13-3268-5) 2019, 3-7

17.

**Author(s)** : A Joshi, K K S Mer, S. Bhattacharya, V K Patel

**Year** : 2019

**Title** : Nano-aluminium as Catalyst in Thermal Decomposition of Energetic Materials

**Editor & Publisher** : Nano-Energetic Materials (Ed. S. Bhattacharya et al.) **Springer Nature** Singapore, (ISBN 978-981-13-3268-5) 2019, 109-120

18.

**Author(s)** : J K Katiyar, V K Patel

**Year** : 2019

**Title** : Nano-energetic Materials on a Chip

**Editor & Publisher** : Nano-Energetic Materials (Ed. S. Bhattacharya et al.) **Springer Nature** Singapore, (ISBN 978-981-13-3268-5) 2019, 123-139.

19.

**Author(s)** : A Joshi, K K S Mer, S. Bhattacharya, V K Patel

**Year** : 2019

**Title** : Different Approaches to Micro-/ Nano fabricate and Pattern Energetic Materials

**Editor & Publisher** : Nano-Energetic Materials (Ed. S. Bhattacharya et al.) **Springer Nature** Singapore, (ISBN 978-981-13-3268-5) 2019, 177-188.

20.

**Author(s)** : V K Patel, J K Katiyar, S Bhattacharya

**Year** : 2019

**Title** : Solid Energetic Materials-Based Microthrusters for Space Applications

**Editor & Publisher** : Nano-Energetic Materials (Ed. S. Bhattacharya et al.) **Springer Nature** Singapore, (ISBN 978-981-13-3268-5) 2019, 241-249.

21.

**Author(s)** : N Rawat, V K Patel

**Year** : 2018

**Title** : Fluoride Remediation from Drinking Water

**Editor & Publisher** : Water Remediation (Ed. Bhattacharya S. et al.) **Springer Nature**, Singapore Print ISBN 978-981-10-7550-6

#### **E) Patent Granted : (01)**

**Title of Patent** : A Method for Fabricating Natural Fiber Reinforced Epoxy Composites and Evaluating Various Properties of The Fabricated Composites

**Patent No. & Date of Grant** : (2021107058) 01-12-2021

**Inventors** : B. Gangil, S. Kumar, K.K.S. Mer, V K Patel

**Government** : IP Australia

#### **F) Details of the short term courses organized :**

1.

**Name of the short term course** : **Coordinator** in FDP on "Tools and Scientific Communication for Research Article and Proposal Writing"

**Duration** : One Week

**Sponsored by** : TEQIP, G B Pant Institute of Engineering &

Year : September 19-23, 2020

2.

**Name of the short term course :** Co-Convener in STC on "Recent Development in Mechanical Engineering"

**Duration :** One Week

**Sponsored by :** TEQIP, G B Pant Institute of Engineering & Technology Pauri

**Year :** September 7-11, 2020

3.

**Name of the short term course :** Organizing Secretary in International FDP on "Experimental and Numerical Methods for Mechanical Engineers"

**Duration :** Two Week

**Sponsored by :** TEQIP, G B Pant Institute of Engineering & Technology Pauri

**Year :** August 17-28, 2020

4.

**Name of the short term course :** Coordinator of STC "Advances in Materials & Manufacturing"

**Duration :** One Week

**Sponsored by :** TEQIP, G B Pant Institute of Engineering & Technology Pauri

**Year :** 24-28 Dec, 2018

5.

**Name of the short term course :** Coordinator of STC "Advanced Manufacturing Technology"

**Duration :** One Week

**Sponsored by :** TEQIP, G.B. Pant Engineering College Pauri

**Year :** 8-12 June, 2015

**G) Invited Lectures/Talks at National or international**

**Conference/ Seminar/Workshop:**

1.

**Title of Lecture/ Invited Talks :** Nano-Energetic Materials Integrated MEMS Technology

**Title of Conference/ Seminar/STC :** 3rd National Conference on Recent Innovations in Emerging Technology & Science

**Date of the event :** 9-10 Aug, 2019

**Organized by :** JBIT Dehradun

**International/ National :** National

2.

**Title of Lecture/ Invited Talks :** Nano-energetic Materials based Microsystems

**Title of Conference/ Seminar/STC :** TEQIP STC on Advances in Materials & Manufacturing

**Date of the event :** 24-28 Dec 2018

**Organized by :** G B Pant Institute of Engg & Technology Pauri

**International/ National :** National

3.

**Title of Lecture/ Invited Talks :** Nano Fabrication and Characterization of energetic materials

**Title of Conference/ Seminar/STC :** TEQIP Workshop on Advanced Micro-Nano Technologies  
**Date of the event :** 09-13 May 2016  
**Organized by :** I.I.T. Kanpur  
**International/ National :** National

4.

**Title of Lecture/ Invited Talks :** Nanoscale energetic composites and Their Applications in Bio-MEMS and Manufacturing  
**Title of Conference/ Seminar/STC :** TEQIP STC on Advanced Manufacturing Technology  
**Date of the event :** 08-12 June 2015  
**Organized by :** G. B. Pant Engineering College Pauri  
**International/ National :** National



## M. Tech. (Production Engineering) Thesis Supervision

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**M. Tech. Thesis Supervised:** 22 (Completed)

1.

**Name of Student :** Madhu Sudan Painuly  
**Year :** 2015  
**Title of Thesis :** Development of high performance nanothermite composite based on pine tree extract-based CuO and enhanced performance by adding manganese oxalate

2.

**Name of Student :** Anu Choudhary  
**Year :** 2015  
**Title of Thesis :** Combustion Characteristics of Nanothermite Composites and its application in Metal Forming

3.

**Name of Student :** Komal Rani  
**Year :** 2015  
**Title of Thesis :** Friction stir welding of nano alumina reinforced aluminium alloy matrix composites

4.

**Name of Student :** Anil Dhanola  
**Year :** 2015  
**Title of Thesis :** Comparative study of physico-mechanical Properties of luffa fiber based polymer composites with micro-additives of Al<sub>2</sub>O<sub>3</sub>, CaCO<sub>3</sub>, and TiO<sub>2</sub>

5.

**Name of Student :** Ashish Chaudhary  
**Year :** 2015  
**Title of Thesis :** Experimentation and optimization of WEDM machining of heat treated ASSAB80 tool steel

6.

**Name of Student :** Shivani Chauhan  
**Year :** 2016

**Title of Thesis :** Physio-Mechanical and Wear Properties  
Investigations of Sour-Weed/Polyester and Cotton-  
Grass/Polyester Composites

7.

**Name of Student :** Neelam Rawat

**Year :** 2016

**Title of Thesis :** Investigations of Physico-Mechanical and  
Tribological Properties of Sagwan Teak-Wood Flour/Polyester  
Composites with and without Gum Rosin Binder

8.

**Name of Student :** Neeraj Kandpal

**Year :** 2016

**Title of Thesis :** Experimental And Mathematical Investigation of  
Slurry Erosion Rate of 304L And 316L Stainless Steel At Different  
Impingement Angles

9.

**Name of Student :** Surya Pratap S. Chauhan

**Year :** 2016

**Title of Thesis :** Investigation of AWJM Parameters on ZrO<sub>2</sub> And  
SiC Particles Reinforced Al<sub>2014</sub> Metal Matrix Composites

10.

**Name of Student :** Padyumn Kumar Arya

**Year :** 2016

**Title of Thesis :** Microstructure, Mechanical and Wear Properties  
of Friction Stir Welded Aluminium Alloys of AA6063-T6 And  
AA5052-H32

11.

**Name of Student :** Menka Negi

**Year :** 2016

**Title of Thesis :** Investigation of Mechanical and Electrical  
Properties and Optimization of Wire-EDM Machining  
Parameters of Al<sub>2014</sub>/TiB<sub>2</sub> Composite

12.

**Name of Student :** Reshma Jahan

**Year :** 2017

**Title of Thesis :** Investigations of Mechanical and Microstructural  
Properties of Friction Stir Welded Aluminium Alloys of AA2024-  
T3 and AA5083-H111

13.

**Name of Student :** Arvind Singh Negi

**Year :** 2017

**Title of Thesis :** Investigations of Physico-Mechanical Properties  
of Carbon/Kevlar/Hemp Fiber Reinforced Hybrid Epoxy  
Composites

14.

**Name of Student :** Mayank Benjwal

**Year :** 2017

**Title of Thesis :** Investigation of Mechanical and Electric  
Discharge Machining Characteristics of TiB<sub>2</sub> and Si<sub>3</sub>N<sub>4</sub>  
Reinforced Aluminium Metal Matrix Composites

15.

**Name of Student :** Nitesh Kumar

**Year :** 2017

**Title of Thesis :** Effect of SiC and Si<sub>3</sub>N<sub>4</sub> particles on Microstructure and Mechanical Properties of Friction Stir Welded AA6061-T6 Aluminium Alloy

16.

**Name of Student :** Aarti Kalra

**Year :** 2017

**Title of Thesis :** Investigation of Physico-Mechanical Properties of Cotton Grass Fibre Based Epoxy Composites with micro-additives of CaCO<sub>3</sub> and Bone Ash

17.

**Name of Student :** Gunjan

**Year :** 2017

**Title of Thesis :** Friction Stir Welding of Nano Si<sub>3</sub>N<sub>4</sub> Reinforced Al<sub>3</sub>Si Composites

18.

**Name of Student :** Shailja Bahuguna

**Year :** 2018

**Title of Thesis :** Effect of different welding speeds and tool rotation speeds on the mechanical properties of friction stir welded nickel plated AA6061-T6

19.

**Name of Student :** Hemrashmi Rawat

**Year :** 2018

**Title of Thesis :** Effect of cryogenic flow on microstructure and mechanical properties of friction stir welded AA6061 Aluminum

20.

**Name of Student :** Nitish Phulera

**Year :** 2019

**Title of Thesis :** Effect of different welding speed and tool rotation on Mechanical Properties of Friction stir welded plasma nitrided AA2024-T3 plates

21.

**Name of Student :** Priya

**Year :** 2019

**Title of Thesis :** Effect of different welding speed and tool rotation on Mechanical Properties of Friction stir welded carbonitrided AA2024-T3 plates

22.

**Name of Student :** Atul Chauhan

**Year :** 2021

**Title of Thesis :** Optimization of Wire-EDM parameters on Machining

**Year :** 2021

**Title of Thesis :** Optimization of Wire-EDM parameters on Machining





## Ph.D Degrees Supervision

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**Ph.D. Thesis Supervised:** 03 (Awarded)

URL of PhD Thesis: <http://hdl.handle.net/10603/339575>

1.

**Name of Student :** Sandeep Kumar

**Date of PhD Completion :** 25-08-2021

**Institute :** Uttarakhand Technical University, Dehradun

**Title of Thesis :** Physical, mechanical and sliding wear properties of Bauhinia Vahlia fiber reinforced epoxy composites

2.

**Name of Student :** Ankur Bisht

**Date of PhD Completion :** 18-10-2021

**Institute :** Uttarakhand Technical University, Dehradun

**Title of Thesis :** Investigation of Mechanical and sliding wear behavior of Al-metal foam with addition of zinc and magnesium for structural application.

3.

**Name of Student :** Sanjeev Kumar

**Date of PhD Completion :** 22-12-2021

**Institute :** Uttarakhand Technical University, Dehradun

**Title of Thesis :** Physico-mechanical properties of Himalayan Agave Fiber reinforced Polyester Composites

**Year :**

**Title of Thesis :**



## Awards and Recognitions

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· Best Poster Award in 3rd International Conference on Advanced Nanomaterials and Nanotechnology 2013 at IIT Guwahati

· Best Teacher Award (2016) in MED, G B Pant Institute of Engineering & Technology Pauri Garhwal



## Society Contribution

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· Meditation Trainer ([www.heartfulness.org](http://www.heartfulness.org))



## Names and Address of Referees

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1.

Dr Shantanu Bhattacharya,  
Professor,  
Department of Mechanical Engineering  
IIT Kanpur  
Email: [bhattacs@iitk.ac.in](mailto:bhattacs@iitk.ac.in)

2.

Dr Shantanu Bhowmik  
Professor

Department of Aerospace Engineering,  
Amrita Vishwa Vidyapeetham, Coimbatore  
Email: [b\\_shantanu@cb.amrita.edu](mailto:b_shantanu@cb.amrita.edu)