

DR. PRASHANT JINDAL(Ph.D.)

Commonwealth Rutherford Fellow,

Assistant Professor,

Mechanical Engineering Department,

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International Awards

Commonwealth Rutherford Post-Doctoral fellow,
Nottingham Trent University, Nottingham, United Kingdom

Research Interests

Mechanical characterization, nano-bio-composite materials,
dental prosthesis & diagnostic devices, rapid prototyping

Work Experience

| Institution/Company | Designation | Period |
|---|--------------------------------|--------------------------|
| University Institute of Engineering & Technology (UIET), Panjab University(PU), Chandigarh, INDIA | Assistant Professor | (Sep, 2008 – Till Date) |
| Nottingham Trent University (NTU), Nottingham, United Kingdom | Commonwealth Rutherford Fellow | (March, 2018- Dec-2018) |
| Perot Systems, Noida, India | Software Developer | (June, 2006 – July,2008) |
| Chandigarh College of Engineering & Technology, Chandigarh, India | Lecturer | (Feb,2003 - July,2003) |
| Larsen & Toubro Ltd, Bengaluru, India | Marketing Executive | (Sep, 2002 – Dec, 2003) |

Academic Background

| Examination/Degree | Institution | Year of Passing | % Marks |
|--|--|-----------------|---------|
| Ph.D. (Faculty of Engineering & Technology) <i>(Title- 'Evaluation of dynamic and static strength of carbon nanotubes based composites and coated materials')</i> | Panjab University, Chandigarh | 2014 | - |
| M.E. (Mechanical Engineering) | Punjab Engineering College, Chandigarh | 2006 | 79.6 |
| B.E. (Mechanical Engineering) | Punjab Engineering College, Chandigarh | 2002 | 70.7 |

Research Projects

1. Principal Investigator for the sub-theme title-"Medical Devices and Restorative Technologies," Design Innovation Centre *funded by MHRD, New Delhi*, 2015 to 2018 (for \$225,000/-)
2. Principal Investigator for the project title-"Development and characterization of polycarbonate and glass CNT with specific reference to energy absorption and pressure sensing characteristics," *funded by ARMREB, DRDO, New Delhi*, 2011 to 2015 (for \$ 22,500/-)

Consultancies

1. Consultant for development of neuro hand glove medical devices with Tynor Orthotics Pvt. Ltd., Mohali, INDIA
2. In house consultancy facility at Panjab University for 3D printing on FDM and Stratasys Polyjet printer
3. Consultant for designing and fabrication of 3 axis milling machine with Esteem Industries Baddi, INDIA

List of publications in Journals

1. S. Kapoor, M. Goyal, and **P. Jindal**, "Enhanced thermal, static and dynamic mechanical properties of multi-walled carbon nanotubes reinforced Acrylonitrile Butadiene Styrene nanocomposite." *Journal of Thermoplastic Composite Materials* (ACCEPTED) (IMPACT FACTOR- 1.34)
2. D. Kumar and **P. Jindal** , "Tensile, torsional and bending behavior of multi-walled carbon nanotube-reinforced polyurethane composites", *International Journal of Plastics Technology*(ACCEPTED)
3. **P. Jindal**, M. Juneja, F.L. Siena, D. Bajaj, and P. Breedon, "Mechanical and geometrical properties of thermoformed and 3D printed clear dental aligners", *American Journal of Orthodontics & Dentofacial Orthopedics*, vol. 156, no. 5, pp. 694–701, 2019 (IMPACT FACTOR- 2.33)
4. D. Kumar and **P. Jindal**, "Effect of multi-walled carbon nanotubes on thermal stability of polyurethane nanocomposites," *Materials Research Express*, vol. 6, no. 10, p. 105336, Aug. 2019. (IMPACT FACTOR- 1.45)
5. A. Thakur, A. Manna, S. Samir, and **P. Jindal**, "Polymer nanocomposite reinforced with selectively synthesized coiled carbon nanofibers," *Composite Interfaces*, vol. 0, no. 0, pp. 1–12, 2019. (IMPACT FACTOR- 2.03)
6. M. Juneja, S.Singh, N. Agarwal, S. Bali, S. Gupta, N. Thakur and **P. Jindal**, "Automated detection of Glaucoma using deep learning convolution network (G-net)," *Multimedia Tools and Applications*, Apr. 2019. (IMPACT FACTOR- 2.10)
7. **P. Jindal**, F. Worcester, K. Walia, A. Gupta, and P. Breedon, "Finite element analysis of titanium alloy-graphene based mandible plate," *Computer methods in biomechanics and biomedical engineering*, pp. 1–7, 2019. (IMPACT FACTOR- 1.61)
8. **P. Jindal**, F. Worcester, A. Gupta, and P. Breedon, "Efficiency of nanoparticle reinforcement using finite element analysis of titanium alloy mandible plate," *Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine*, , vol.233, no.3, pp.309-317, 2019. (IMPACT FACTOR- 1.32)
9. D. K. Gill, K. Walia, A. Rawat, D. Bajaj, V. K. Gupta, A. Gupta, M. Juneja, R. Tuli, and **P. Jindal**, "3D modelling and printing of craniofacial implant template," *Rapid Prototyping Journal* p. RPJ-12-2017-0257, Vol.25, No.2, pp.397-403, 2019 (IMPACT FACTOR- 4.17)

10. M. Juneja, N. Thakur, D. Kumar, A. Gupta, B. Bajwa, and **P. Jindal**, “Accuracy in dental surgical guide fabrication using different 3-D printing techniques,” *Additive Manufacturing*, vol. 22, no. August 2018, pp. 243–255, 2018. (**IMPACT FACTOR- 7.17**)
11. S. Arora, G. Saini, L. Singhal, P. Uniyal, N. Kumar, and **P. Jindal**, “Effect of Manufacturing Processes on Creep Modulus, Strain Rate and Residual Stress of Polymers,” *Journal on Material Science*, vol. 5, no. 4, pp. 47–54, 2018.
12. D. Kumar, N. Kumar, and **P. Jindal**, “Effect of MWCNTs on damping behaviour of Polyurethane based nano-composites,” *Materials Today: Proceedings.*, vol. 5, no. 2, pp. 5636–5640, 2018.
13. D. Bajaj, I. Madhav, M. Juneja, R. Tuli, and **P. Jindal**, “Methodology for Stress Measurement by Transparent Dental Aligners using Strain Gauge,” *World Journal of Dentistry*, vol. 9, no. 1, pp. 13–18, 2018.
14. H. P. Singh, A. Chauhan, and **P. Jindal**, “Fabrication of Al2024/MWCNT Composite,” *Res. J. Eng. Technol.*, vol. 8, no. 3, pp. 191–194, 2017.
15. **P. Jindal**, R. N. Yadav, and N. Kumar, “Dynamic mechanical characterization of PC/MWCNT composites under variable temperature conditions,” *Iranian Polymer Journal*, vol. 26, no. 6, pp. 445–452, 2017. (**IMPACT FACTOR- 1.71**)
16. K. Kulshrestha, B. Thakur, Y. P. Verma, and **P. Jindal**, “Development of Small Pressure Sensing Unit using Nano-Materials,” *Materials Today: Proceedings.*, vol. 4, no. 9, pp. 10422–10426, Jan. 2017.
17. N. Thakur, N. Chaudhary, M. Juneja, and **P. Jindal**, “Modeling and Printing of Successive Misaligned Teeth Stages,” *World Journal of Dentistry*, vol. 8, no. 4, pp. 309–314, 2017.
18. S. Bansal, N. Kumar, and **P. Jindal**, “Effect of MWCNT Composition on the Hardness of PP/MWCNT Composites,” *Materials Today: Proceedings.*, vol. 4, no. 2, pp. 3867–3871, 2017.
19. D. Kumar, N. Kumar, and **P. Jindal**, “Elastic Modulus Behavior of Multi-Walled Carbon Nano-Tubes / Polyurethane Composites using Nano- Indentation Techniques,” *Indian Journal of Science and Technology.*, vol. 10, no. 17, pp. 1–4, 2017.
20. S. Kapoor, M. Goyal, and **P. Jindal**, “Effect of Multi-Walled Carbon Nanotubes (MWCNT) on Mechanical Properties of Acrylonitrile Butadiene Styrene (ABS) Nano-Composite,” *Indian Journal of Science and Technology.*, vol. 10, no. 17, pp. 1–6, 2017.

21. V. Sharma, M. Goyal, and **P. Jindal**, "Preparation , Characterization and Study of Mechanical Properties of Graphene / ABS Nano- Composites," *Indian Journal of Science and Technology.*, vol. 10, no. 17, pp. 1–5, 2017.
22. N. Thakur, M. Juneja, and **P. Jindal**, "Tooth / Teeth Segmentation and modeling from X-ray / CT images : A Survey," *International Journal of Control Theory and Applications*, vol. 10, no. 8, pp. 423–428, 2017.
23. M. Goyal, N. Goyal, H. Kaur, A. Gera, K. Minocha, and **P. Jindal**, "Fabrication and characterization of Low Density PolyEthylene(LDPE)/Multi Walled Carbon Nanotubes(MWCNTs) nano-composites," *Perspectives in Science*, vol. 8, pp. 3–5, 2016.
24. **P. Jindal**, J. Jyoti, and N. Kumar, "Mechanical characterisation of ABS/MWCNT composites under static and dynamic loading conditions," *Journal of Mechanical Engineering and Sciences (JMES)*, vol. 10, no. 3, pp. 2288–2299, 2016.
25. S. Singh, A. Kaur, and **P. Jindal**, "Mechanical Behaviour of MWCNT Reinforced Polymer Composites : A Review," *International Journal of Scientific Research*, vol. 4, no. 10, pp. 68–72, 2015.
26. **P. Jindal**, M. Sain, and N. Kumar, "Mechanical characterization of PMMA / MWCNT composites under static and dynamic loading conditions," *Materials Today: Proceedings*, vol. 2, no. 4–5, pp. 1364–1372, 2015.
27. S. Gairola, S. K. Pandey, S. S. Gupta, and **P. Jindal**, "Effect of MWCNT composition on the thermal conductivity behavior of PP /MWCNT composites," *International Journal of Mechanical And Production Engineering*, vol. 3, no. 9, pp. 21–24, 2015.
28. **P. Jindal**, S. S. Gupta, S. Bansal, S. Gairola, S. K. Pandey, A. P. Singh, and R. Bhandari, "Thermal Expansion Behaviour of PMMA / MWCNT Composites," *International Journal of Research in Mechanical Engineering & Technology* , vol. 4, no. 2, pp. 62–64, 2014.
29. **P. Jindal**, M. Goyal, and N. Kumar, "Mechanical characterization of multiwalled carbon nanotubes-polycarbonate composites," *Materials & Design*, vol. 54, pp. 864–868, 2014 (**IMPACT FACTOR- 5.83**)
30. **P. Jindal**, M. Goyal, and N. Kumar, "Role of carbon nanotubes in polycarbonate composites for modification in hardness," *International Journal of Nanoelectronics and Materials.*, vol. 7, no. 2, pp. 85–91, 2014.
31. S. Jandial and **P. Jindal**, "Review of Carbon Nanotubes/Poly (methyl methacrylate) Composite Fabrication and Mechanical Characterization Techniques," *International Journal of Research in Advent Technology.*, vol. 1, no. 2, pp. 92–94, 2014.

32. A. Chhibba and **P. Jindal**, “Mechanical Characterization of Varying Deposits of MWCNTs on Glass Surfaces under High Strain Rate Loading,” *International Journal of Research in Advent Technology*, vol. 2, no. 5, pp. 147–151, 2014.
33. A. Chauhan, A. Singla, N. Panwar, and **P. Jindal**, “CFD based thermo-hydrodynamic analysis of circular journal bearing,” *International Journal of Advanced Mechanical Engineering*, vol. 4, no. 5, pp. 475–482, 2014.
34. A. Chauhan, A. Singla, A. Chhibba, and **P. Jindal**, “Static Load Measurement Using Multi Walled Carbon Nanotubes,” *International Journal of Advanced Mechanical Engineering*, vol. 4, no. 5, pp. 483–487, 2014.
35. **P. Jindal**, S. Pande, P. Sharma, V. Mangla, A. Chaudhury, D. Patel, B. P. Singh, R. B. Mathur, and M. Goyal, “High strain rate behavior of multi-walled carbon nanotubes–polycarbonate composites,” *Composites Part B: Engineering*, vol. 45, no. 1, pp. 417–422, Feb. 2013 (**IMPACT FACTOR – 6.86**)
36. **P. Jindal**, M. Goyal, and N. Kumar, “Modeling Composites of Multi-Walled Carbon Nanotubes in Polycarbonate,” *International Journal for Computational Methods in Engineering Science and Mechanics*, vol. 14, no. 6, pp. 542–551, Oct. 2013
37. **P. Jindal**, M. Goyal, and N. Kumar, “Dynamic Impact Absorption Behaviour of Glass Coated with Carbon Nanotubes,” *Journal of Surface Engineered Materials and Advanced Technology*, vol. 3, no. October, pp. 257–261, 2013.
38. **P. Jindal**, “Compressive Strain Behaviour under Different Strain Rates in Multi-Walled Carbon Nanotubes-Polycarbonate Composites,” *Journal of Material Science & Engineering*, vol. 02, no. 01, pp. 2–4, 2013
39. **P. Jindal** and V. K. Jindal, “Strains in axial and lateral directions in carbon nanotubes,” *Journal of Computational and Theoretical Nanoscience.*, vol. 3, no. 1, pp. 148–152, 2006.
40. **P. Jindal** and V. K. Jindal, “Model for compression of fullerenes and carbon nanotubes,” *Molecular Simulation*, vol. 31, no. 12, pp. 807–810, 2005.(**IMPACT FACTOR–1.25**)
41. I. S. Chopra, **P. Jindal**, and M. L. Sharma, “Production of Carbon Nanotubes using arc ignition of graphite in de-ionized water,” *Panjab University Research Journal(Science)*, vol. 55, pp. 39–41, 2005.

List of Books/Book chapters published

1. D. Bajaj, A. Rawat, D. K. Gill, M. Juneja, and **P. Jindal**, “Efficacy of Softwares for Generation of Dental Aligners,” in Proceedings of 2nd International

- Conference on Communication, Computing and Networking, 2019, pp. 783–794. ISBN: 9789811312175
2. A. Rawat, D. K. Gill, D. Bajaj, M. Juneja, A. Gupta, and **P. Jindal**, “Craniofacial Model Generation Using CAD/CAM Software,” in *Proceedings of 2nd International Conference on Communication, Computing and Networking*, 2019, pp. 795–803. ISBN: 9789811312175
 3. D. K. Gill, D. Bajaj, A. Rawat, Y. G. Mittal, M. Juneja, and **P. Jindal**, “Dimensional Accuracy of Surgical Guides Fabricated from Different Materials Using 3D Printer,” in *Proceedings of 2nd International Conference on Communication, Computing and Networking*, 2019, pp. 805–813. ISBN: 9789811312175
 4. **P. Jindal**, “*High Strain Rate Behavior of Nanocomposites and Nanocoatings*,” SpringerBriefs in Materials, 2014, ISBN: 978-3-319-14480-1
 5. **P. Jindal**, “*Dimensional measurements and Poisson’s ratio of Carbon Nanotubes*,” LAP LAMBERT Academic Publishing, 2014, ISBN: 978-3-659-56207-5
 6. Saurav Gairola, Amrinder Pal Singh, **P. Jindal**, “*Review of Thermal Characterization of Polymer-Carbon Nanotubes*”, Processing and Fabrication of Advanced Materials: XXIII, Volume-1, ISBN: 978-93-84588-17-5
 7. **P. Jindal**, Aditya Chhibba, Navin Kumar, “*Dynamic Mechanical Analysis of PMMA/MWCNT composites*”, Nanotechnology: Novel Perspectives and Prospects, ISBN(13): 978-93-392-2109-6

International talks and lectures

1. “Effects of variable temperature conditions and loading frequency on mechanical properties of MWCNT/PC composites”, International Conference on Advanced Nanotechnology and Nanomaterials, Dubai, UAE, 20-21, Nov, 2019
2. “Innovative devices in the area of medical applications,” Technology Day, Panjab University, Chandigarh, INDIA, 3, June, 2019
3. “3D Printing for Medical Applications,” Indian Institute of Technology(IIT), Ropar, INDIA, 15, Jan, 2019
4. “3D Modeling and printing for biomedical devices and restorative materials”, INM, Leibniz Institute for New Materials, Saarbrücken, Germany, 3-5, Sep, 2018

5. “Mechanical characterization of PC/MWCNT composites under variable temperature conditions”, 26th Annual International Conference on Composites or Nano Engineering(ICCE-26), Paris, France, 15-21 July, 2018
6. “Storage Modulus variation for MWCNT/PC composites at different temperatures”, International Conference on Advanced Composite Materials(ACM 2015), Shanghai, China, 19-21 July, 2015
7. “Role of Carbon Nanotubes for pressure sensing applications”, Harnessing Engineering, Technology, and Innovation for Sustainable Growth (HETIS-2014), P.U. , Chandigarh, 19-20 September, 2014
8. “Dynamic and static mechanical strength of multi-walled carbon nanotubes polycarbonate composites”, 22nd Annual International Conference on Composites or Nano Engineering(ICCE-22), Malta, Europe, 13-19 July, 2014
9. “Modification of hardness of glass and polycarbonates by carbon nanotubes,” 4th Chandigarh Science Congress, CHASCON 2010 at P.U., Chandigarh, 19-20 March,2010

List of proceedings in Conferences

1. **P. Jindal**, et al, “Conceptualization of design and selection of a spanner to unscrew the wheels of a vehicle more efficiently and speedily,” National Conference on Advances in Mechanical Engineering at P.U., Chandigarh, 20-21 May,2011
2. **P. Jindal**, et al, “Design and Analysis of a Multi-headed multi-lever spanner to unscrew the wheels of a vehicle,” National Conference on Advances in Mechanical Engineering at P.U., Chandigarh, 20-21 May,2011
3. **P. Jindal**, et al, “Shock compression of Fullerenes and Carbon Nanotubes.,” The 25th International Symposium on shock waves-ISSW25 at IISc Bangalore, 17-22 July,2005

Workshops organized

1. ‘Innovation Contest’, 18-19 Sep-2017 at UIET, Panjab University, Chandigarh, INDIA
2. ‘3D Modeling and Printing Skill Development Workshop’, 21-23 Sep-2017 at UIET, Panjab University, Chandigarh, INDIA