

Faculty Profile

Name : Dr. ANJU
Designation : Assistant Professor
Qualifications : PhD (Physics)
Phone :011-25528117
Email :anju.dhillon@msit.in
Area of Interest/Specialization:



Experimental: Conducting Polymers: Synthesis, optimization, characterization and devices.

Nanotechnology: Nanoparticles and nanostructures for biomedical applications.

Nanocomposites: Fundamental physical properties-optical, electrical & magnetic

Nanoscience: Nanorods, Nanowires, Nanoshells, Nanoribbons of metals/semiconductors for applications in nanoelectronics and biotechnology.

Ion beam physics: Ion beam induced engineering (size & shape) of nanostructures.

Technical: Calculation of energy loss, ion ranges of ion in matter using TRIM/SRIM.

Thermal spike calculations for ion tracks in insulators.

XRD data analysis using powder X, size estimation and Reitveld analysis.

Raman data analysis and size calculation.

Good knowledge of different data analysis softwares commonly used.

Good knowledge of windows/vista/linux systems and softwares.

Experience : 11 years 9 months

Key Publications

- Raman Dwivedi, Alok Kumar Singh, **Anju Dhillon**, pH- responsive drug release from dependal-M loaded polyacrylamide hydrogels, *Journal of Science: Advanced Materials and Devices*, 2, 45-50, 2017
- Raman Dwivedi, Alok Kumar Singh, and **Anju Dhillon**, Study of Optical and Charge Transport Properties of Polypyrrole-ZnO Nanocomposite, *Adv. Sci. Eng. Med*, 8, 561-565, 2016

- Alok Kumar Singh, Anju **Dhillon**, T. D. Senguttuvan, A. M. Siddiqui, Structural Phase Stability, Morphological and Magnetic Characterization of a New Orthorhombic Spinel (MgZn_2O_4) Nano-Particle Prepared via Citrate-Gel Auto Combustion Method, *Advanced Science Letters*, 20, 7-9, pp.1662-1665(4), 2014
- Alok Kumar Singh, Anju **Dhillon**, T.D. Senguttuvan and Azher M. Siddiqui, Synthesis, Characterization and DC Conduction Mechanism in Inverse Spinel Compound (Mg_2TiO_4), *International Journal of Current Engineering and Technology*, Vol. 4, issue 1, 2014.
- Anju **Dhillon**, Structural and Morphological modification of 100 MeV, silver (Ag^{8+}) Swift Heavy Ions Irradiated Polypyrrole, *Int. J. Adv. Res. Sci. Technol.*, 2, 1, pp 46-50, 2013.
- Alok Kumar Singh, Anju **Dhillon**, T.D.Senguttuvan and Azher M. Siddiqui, Study of curious spiral like features in inverse spinel compound (Mg_2TiO_4), *Int. J. Adv. Res. Sci. Technol.*, Volume 2, Issue2, pp 63-66, 2013.
- Amarjeet Kaur, Anju **Dhillon**, D.K. Avasthi, Low frequency alternating current conduction and dielectric relaxation in polypyrrole irradiated with 100 MeV swift heavy ions of silver (Ag^{+8}), *Material Chemistry and Physics*, 140, Issues 2–3, 472-477, 2013.
- Amarjeet Kaur, Anju **Dhillon**, GBVS Lakshmi, Yogendra Misra, D.K. Avasthi, Modifications induced in poly (3-hexylthiophene) due to swift heavy ion beam of 100MeV silver (Ag^{8+}) , *Materials Chemistry and Physics*, 131, 141, 2011.
- Anju **Dhillon**, Amarjeet Kaur, D. K Avasthi, Electrical, structural and morphological properties of poly(3-hexyl thiophene) irradiated with 100 MeV silver ions, *Thin Solid Films*, 519, 998–1002, 2010.
- Amarjeet Kaur, Anju **Dhillon**, D.K. Avasthi, A. K. Srivastava, Experimental investigations of semi-crystalline plasma polymerized poly(3-octyl thiophene), *Thin Solid Films*, 519, 1003–1006, 2010.
- Anju **Dhillon**, Amarjeet Kaur, A. K. Srivastava, D. K Avasthi, Experimental investigations of semi-crystalline plasma polymerized polypyrrole for surface coating, *Progress in Organic Coatings*, 69 396–401, 2010.
- G.B.V.S. Lakshmi, Anju **Dhillon**, D.K. Avasthi, Azher M. Siddiqui, M. Zulfeqar, Synthesis and characterization of thin films of poly(3-methyl thiophene) by rf-plasma polymerization, *Materials Letters*, 64, 1672–1673, 2010.

- Amarjeet Kaur, **Anju Dhillon**, D. K Avasthi, Effect of 100 MeV swift heavy ions (silver (Ag⁸⁺)) on morphological and electrical properties of polypyrrole, *J. Appl. Phys.*, 106, 1, 2009.
- GBVS Lakshmi, **Anju Dhillon**, M. Julficar, A. M. Siddique and D. K. Avasthi, RF Plasma polymerization and characterization of Polyaniline, *European Polymer Journal*, 45, 2873, 2009.

Papers presented in Conferences

- Aasim Hussain, A.M. Siddiqui, **Anju Dhillon**, Shafaque Rahman, Navjyoti Boora, A.K. Hafiz, Study of DC sputtered undoped NiO thin films, national conference on Sensors & Advance materials for Measurement & Quality improvement (Admet-2021), 5-6 March 2021
- Aasim Hussain, Shumaila, **Anju Dhillon**, I Sulania & Azher M Siddiqui, Comparative study of Polypyrrole/Zinc Oxide nanocomposites synthesized by different methods, 5th International Conference on Advanced Production and Industrial Engineering (ICAPIE 2020) is being organized by CAPIER DTU during First week of June 2020.
- Aasim Hussain, A.M. Siddiqui, **Anju Dhillon**, Synthesis and characterization of PPY-ZnO nanocomposites, International Conference on materials for energy applications 6-8 Dec 2018.
- **Anju Dhillon**, Alok Kumar Singh, Study of mechanism of charge transport in nickel (100MeV) swift heavy ions irradiated polypyrrole, International conference on Frontiers of Science and Technology-2017 (ICFST-2017) at KIET Ghaziabad, U.P. India
- **Anju Dhillon**, Alok Kumar Singh, Gas evolution studies of swift heavy ion (100MeV Ag⁸⁺ ion) irradiated Polypyrrole, IBMEC-2016; 28 Sept-01 Oct 2016 at IUAC New Delhi.
- Alok Kumar Singh, **Anju Dhillon**, A. M. Siddiqui, T. D. Senguttuvan, Structural and morphological study of Mg Zn₂O₄ spinel compound, National conference on nanotechnology and renewable energy, 28-29 April 2014 at New Delhi.
- **Anju Dhillon**, Amarjeet Kaur, Structural and chemical modification of of Poly(3-hexyl thiophene) due to the irradiation of Ag and C swift heavy ions, **ICNIB 2013** took place from 23 - 25 October, 2013 at Jaipur
- **Anju Dhillon**, Amarjeet Kaur Modification of properties of Poly(3-hexyl thiophene) due to of various swift heavy ions MACRO 2010, Frontiers of Polymers and Advanced Materials, December 15 - 17, 2010 India Habitat Centre, New Delhi, India

- Amarjeet Kaur, **Anju Dhillon**, D. K. Avasthi, Modification of conducting polymers by 100 MeV swift heavy ions of silver, International Conference, Frontiers in Polymer Sciences, 7-9 June, 2009, Mainz, Germany
- **Anju Dhillon**, Amarjeet Kaur, D. K. Avasthi, Experimental Investigation of Structural and Morphological Properties of Swift Heavy Ion beam Irradiated Polypyrrole, Sixteenth National Symposium on Solid State Nuclear Track Detectors and Their Applications (SSNTD-16) October 26-28, 2009 , GNDU Amritsar, India.
- Amarjeet Kaur, **Anju Dhillon**, Experimental investigations of properties of Poly (3-octythiophene)/single walled carbon nanotubes composite for application in organic photovoltaics, Indo Russian Workshop on Nanotechnology and Laser Induced Plasma (IRNANO) – 2009, Nov- 24-26, 2009, University of Delhi, Delhi , India.
- **Anju Dhillon**, Amarjeet Kaur, D.K. Avasthi, Structural and Electrical properties modification of Poly (3,4-ethylenedioxy thiophene) complex with polystyrene sulfonate (PDOT:PSS), Irradiated with swift heavy ions of silver, XV International Workshop on the Physics of Semiconductor Devices (IWPSD-XV) 15-19 Dec 2009, Jamia Millia Islamia, New Delhi
- **Anju Dhillon**, Amarjeet Kaur, D.K. Avasthi, Electrical and morphological properties of poly(3-hexyl thiophene) irradiated with 100 MeV silver ions for micropatterning and selective sensor applications, India-Japan workshop on Biomolecular Electronics and Organic Nanotechnology for Environmental Preservation 2009 (IJWBME2009), 17-20, 2009 National Physical Laboratory, December New Delhi
- Amarjeet Kaur, **Anju Dhillon**, D.K. Avasthi, A.K. Srivastava, Experimental investigations of semi-crystalline plasma polymerized poly(3-octyl thiophene) for optical sensor applications, India-Japan workshop on Biomolecular Electronics and Organic Nanotechnology for Environmental Preservation 2009 (IJWBME2009) National Physical Laboratory, December 17-20, 2009 New Delhi
- **Anju Dhillon**, Vishal Parihar , D.K.Avasthi and Amarjeet Kaur, Synthesis of poly(3-hexyl thiophene) and change in its characteristics after irradiation with 100Me Ag⁸⁺ ions, International conference on electroactive polymer (ICEP), 12th -17th Oct-2008, India

Awards and Recognitions

1. My New Education Policy (NEP) Ambassador 2020
2. Mentorship Award by PEACE foundation USA 2014

Patent/Copyright

1. NIL
- 2.

Sponsored Project/Consultancy

1. NIL
- 2.

Book Chapter/Books published

1. **Human Values and Professional Ethics-II**, ISBN: 9788193377819, Rivista Science Publishers, 2017
2. **Human Values and Professional Ethics-I**, ISBN: 9788193377802, Rivista Science Publishers, 2018
3. **Applied Physics-II**, ISBN: 9788193377826, Rivista Science Publishers, 2019

Ph.D Supervised

1 Co-supervisor of one candidate pursuing PhD

Memberships of Professional bodies

1. Ion Beam Society of India, Member ID- LM-6
2. VIBHA Vijnana Bharati, Member ID- 6296

Other Contributions

Trainings and courses

- ❖ Experimental physics 1, Swayam aicte portal, 12 weeks certificate course, 19-sep 2020 to 19 dec 2020
- ❖ ICT tools for Teaching Learning Process and Institute, Electronics and ICT Academies, NIT Patna & MNIT Jaipur, Two weeks online FDP, 10 Aug 2020 to 21 aug 2020
- ❖ Advanced Materials- Fabrication, Characterization and Applications, KIIT Bhubaneswar, One week online FDP, 20 July 2020 to 25 July 2020

- ❖ Classroom Communication through ICT, Education and Educational Management Department, NITTTR Chandigarh, AICTE recognized Short term course, 28 may 2018 to 1 june 2018
- ❖ Power Electronics & its Applications through ICT, Electrical Engineering Department NITTTR Chandigarh, AICTE recognized Short term course, 27 nov 2017 to 1 dec 2017
- ❖ MATLAB and SCILAB through ICT, Electrical Engineering Department NITTTR Chandigarh, AICTE recognized Short term course, 18 sept 2017 to 22 sept 2017
- ❖ Comprehensive Development of Technical Teachers, HMR and Indian Society of Technical Education, One week FDP 8 may 2017 to 13 may 2013
- ❖ Research Methodology and Data Analysis, Maharaja Surajmal Institute , New Delhi, One week FDP, 16 dec 2016 to 23 –dec 2016.
- ❖ **Organized** One week FDP on Classroom communication from NITTTR Chandigarh in MSIT- 2019
- ❖ **Convener** MSIT Cultural Fest GENESIS-2020
- ❖ **Organized** expert lecture of Dr. Servin Rathi from Sungkyunkwan University, Suwon, South Korea 2019
- ❖ Project collaborator of IUAC