Curriculum Vitae

Dr. Mahak
Assistant Professor,
Department of Physics,
Kurukshetra University
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Academic Qualifications

Degree	Institution	Year
Ph. D. (Physics)	Department of Physics, Kurukshetra University	2016
M.Sc. (Physics)	Department of Physics, Kurukshetra University	2009
B.Sc. (Non-Medical)	Institute of Integrated & Honors studies (former University College), Kurukshetra University	2007

Other Qualifications

Degree	Institution	Year
Certificate Course in French	M.E.L., Kurukshetra University	2009
Diploma in French	M.E.L., Kurukshetra University	2010
Advanced Diploma of Proficiency in French	M.E.L., Kurukshetra University	2011

Teaching Experience:

- Assistant Professor (28 October 2016 to till date) Department of Physics, Kurukshetra University, Kurukshetra. (on Contract Basis)
- Lectures and practical lab taken during Ph.D. (2010-2015) at Department of Physics, Kurukshetra University, Kurukshetra.
- Worked as a Teaching Associate in University College, Kurukshetra University and Department of Physics, Kurukshetra University, Kurukshetra, Haryana from (August 2009 to April 2010).

Research Experience:

- Research Associate –I, Department of Physics, Kurukshetra University, Kurukshetra (18 May, 2016 to 27 October, 2016).

Technical Skills:

- Undergone complete training to run and handle 200 keV Ion Accelerator at Ion Beam Centre, Kurukshetra University, Kurukshetra.
- Expertise in operating and analysis of UV-Visible Spectroscopy
- Expertise in analysis of Rutherford Backscattering Spectroscopy
- Expertise in operating and analysis of Dielectric Spectroscopy
- Expertise in operating and analysis of I-V Characterization
- Expertise in operating and analysis of Atomic Force Microscopy

Research Publications: Please see Annexure I

Papers Published in International/ National journals, Proceedings and Conferences/Symposia

Extra-Curricular Activities

- President of Physics Association at college level.
- Secured 2nd rank in B.Sc.-II, B.Sc.-I at college level.
- Attended 10 days NSS camp at college level.

Other Details:

DOB **:** 31.07.1987
Gender **:** Female
Nationality **:** Indian
Marital **:** Married

Annexure I

List of Publications

Research Papers in International/National Journals:

- Flux- dependent epitaxial recrystallization of amorphized Si (111) layers due to oblique argon ion sputtering, Integrated Ferroelectrics 205(1) (2020) 146-155, Divya Gupta , Rimpi Kumari, **Mahak Chawla**, G. R. Umapathy and Sanjeev Aggarwal.
- Nanoscale structural defects in oblique Ar^+ sputtered Si (111) surfaces, Scientific Reports, 9(1) (2019), Divya Gupta, **Mahak Chawla**, Rahul Singhal and Sanjeev Aggarwal.
- Surface characteristics of nitrogen ion implanted CR-39 polymer: RBS studies, Vacuum, 160 (2019) 89-94, **Mahak Chawla**, Divya Gupta, , Sunil Ojha and Sanjeev Aggarwal.
- Surface characteristic study of 130 keV argon ion implanted polypropylene polymer, Integrated Ferroelectrics, 184 (2017) 186, **Mahak Chawla**, Divya Gupta, Sanjeev Aggarwal and Annu Sharma.
- Rutherford Rutherford backscattering spectrometry studies of 100 keV nitrogen ion implanted polypropylene polymer, Nuclear Inst. and Methods in Physics Research B 407C (2017) 125, **Mahak Chawla**, Sanjeev Aggarwal and Annu Sharma.
- Low energy B+ implantation induced optical and structural characteristics of aliphatic and aromatic polymers, Vacuum, 159 (2018), Ambika Sharma, **Mahak Chawla**, Divya Gupta, Rimpi Kumari, Manu Bura, Nidhi Shekhawat and Sanjeev Aggarwal.
- Raman spectroscopy of 200 keV Ar^+ ion implanted high density polyethylene (HDPE) polymer, International Journal of Advanced Studies in Computer Science and Engineering 5 (2016) 37, Rubi, **Mahak Chawla**, Meetika Goyal, Divya Gupta, Nidhi Shekhawat, Sanjeev Aggarwal and Annu Sharma.
- Cole-Cole analysis and electrical conduction mechanism of N^+ implanted polycarbonate ,Journal of Applied Physics 115 (2014) 184104, **Mahak Chawla**, Nidhi Shekhawat, Sanjeev Aggarwal, Annu Sharma and K. G. M. Nair.

- Effect of argon ion implantation on the dielectric properties of polycarbonate, International Journal of Engineering Research and Technology 49 (2013) 50, **Mahak Chawla**, Nidhi Shekhawat, Sanjeev Aggarwal, Annu Sharma and K. G. M. Nair.
- Tailoring Structural Properties of Polyethylene terephthalate (PET) by 200 keV Ar+ Implantation, Advanced Materials Research 665 (2013) 221, **Mahak Chawla**, Rubi, Rajiv Kumar, Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal.

Research Papers in International/National Conferences /Proceedings /Symposia:

- Refractive index and dielectric measurements of B^+ implanted PET in the mid-infrared region, AIP Conf. Proc. 2093(1), 020014 (2019) , Ambika Sharma, Divya Gupta, **Mahak Chawla**, Rimpi Kumari, Nidhi Shekhawat, Annu Sharma and Sanjeev Aggarwal.
- Oblique argon ion irradiation induced optical and structural modifications of polycarbonate polymer, AIP Conf. Proc., 2093(1), (2019), Rimpi Kumari, Divya Gupta, Manu Bura, Ambika Sharma, **Mahak Chawla**, Annu Sharma and Sanjeev Aggarwal.
- Effect of Argon Ion Implantation on the Electrical and Dielectric Properties of CR-39, AIP Conf. Proc., 1731, 070030 (2016), **Mahak Chawla**, Nidhi Shekhawat, Meetika Goyal, Divya Gupta, Annu Sharma and Sanjeev Aggarwal.
- Evolution of nanodot morphology on polycarbonate (PC) surfaces by 40 keV Ar+, AIP Conf. Proc. 1728, 020231 (2016), Meetika Goyal, **Mahak Chawla**, Divya Gupta, Nidhi Shekhawat, Annu Sharma and Sanjeev Aggarwal.
- Electrical properties and dielectric spectroscopy of Ar^+ implanted polycarbonate, AIP Conf. Proc. 1661 (2015) 110005, **Mahak Chawla**, Nidhi Shekhawat, Sanjeev Aggarwal, Annu Sharma and K. G. M. Nair.
- Effect of 200 keV argon ion implantation on refractive index of polyethylene terephthalate (PET), AIP Conf. Proc. 1447 (2012) 607, Rajiv Kumar, **Mahak Chawla**, Rubi, Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal.
- Modifications of the structural properties of Polyethylene terephthalate (PET) by 150 keV Ar+ ion implantation, **Mahak Chawla**, Rubi, Rajiv Kumar, Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal.
- Effect of gamma irradiation on optical and structural properties of Poly Vinyl Chloride (PVC), Rubi, **Mahak Chawla**, Annu Sharma, Sanjeev Aggarwal, P. C. Kalsi and V. K. Manchanda.

Papers presented in International/National Conferences/Symposia

- "Surface characteristic study of 130 keV argon ion implanted polypropylene polymer", in International Conference on Technologicallly Advanced Materials and Asian Meeting on Ferroeelctricity, held at Delhi University, November 7-11, 2016, **Mahak Chawla,** Divya Gupta, Sanjeev Aggarwal and Annu Sharma.
- "Effect of Argon Ion Implantation on the Electrical and Dielectric Properties of CR-39", in 60th DAE-Solid State Physics Symposium, December 21-25, 2015, held at Amity University UP, Noida, **Mahak Chawla,** Nidhi Shekhawat, Meetika Goyal, Divya Gupta, Annu Sharma and Sanjeev Aggarwal.
- "Optical Behaviour of Low Energy Ar^+ Implanted Polypropylene" in National Conference on Physics Industry Interface (NCPII-2015), September 02-04, 2015 at Kurukshetra University, Kurukshetra.
- "Electrical properties and dielectric spectroscopy of Ar^+ implanted polycarbonate" in International Conference on Condensed Matter Physics (ICCMP-2014), November 4-6, 2014 at Department of Physics, Himachal Pradesh University, Shimla, **Mahak Chawla,** Nidhi Shekhawat, Sanjeev Aggarwal, Annu Sharma and K. G. M. Nair.
- "Effect of argon ion implantation on the dielectric properties of polycarbonate" in 3rd National Conference on Advanced Materials and Radiation Physics (AMRP-2013), November 22-23, 2013 at Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur, Punjab, **Mahak Chawla,** Nidhi Shekhawat, Sanjeev Aggarwal, Annu Sharma and K. G. M. Nair.
- "Ion Beam Engineering of Polymeric Materials" in Student Research Convention ANVESHAN, in Student Research Convention at University Level Feb. 7-8, 2013 at Kurukshetra University Kurukshetra.
- "Electrical and Optical characteristics of Ar^+ implanted Polyethylene terephthalate (PET)", in International Conference and Workshop on Nanostructured Ceramics and Other Nanomaterials (ICWNCN) March 13-16, 2012, held at Department of Physics and Astrophysics, University of Delhi, Delhi, Rajiv Kumar, **Mahak Chawla**, Rubi, Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal.
- "Tailoring Structural Properties of Polyethylene terephthalate (PET) by 200 keV Ar+ Implantation", 3rd National Conference on Condensed Matter and Materials Physics, March 3-5, 2012, held at Department of Physics, Sardar Patel University, Vallabh

Vidyanagar, Gujarat, **Mahak Chawla**, Rubi, Rajiv Kumar, Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal.

- "Modifications of the structural properties of Polyethylene terephthalate (PET) by 150 keV Ar+ ion implantation", in UGC sponsored National Conference on Recent Advances in Material Science (NCRAMS-2012), February 25-26, 2012, held at Dyal Singh College, Karnal, **Mahak Chawla**, Rubi, Rajiv Kumar, Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal**.**
- "Effect of 200 keV argon ion implantation on refractive index of polyethylene terephthalate (PET)", in 56th DAE-Solid State Physics Symposium, December 19-23, 2011, held at SRM University, Kattankulathur, TamilNadu, Rajiv Kumar, **Mahak Chawla,** Rubi, Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal.
- "Effect of 150 keV Argon ion implantation in Polyethylene terephthalate (PET)", in National Seminar on Frontiers in Polymer Science, November 18-19, 2011, held at Department of Chemistry, Himachal Pradesh University, Shimla, Rajiv Kumar, **Mahak Chawla,** Annu Sharma, Sanjeev Aggarwal, Praveen Kumar and D. Kanjilal.

Workshop/ School/ Symposium Participated

- National School cum Workshop in Acclerator Physics, March 15-18, 2016, Department of Physics, Panjab University, Chandigarh.
- Two Days 2nd National Workshop on Ion Beam Induced Growth and Engineering of Materials, March 04-05, 2016 at Department of Physics, Kurukshetra University, Kurukshetra.
- One Day National Workshop on Intellectual Property Rights organized by IPR cell, December 21, 2016 at Department of Physics, Kurukshetra University, Kurukshetra.
- School on Accelerator Science and Technology, May 12-23, 2014 at Inter University Accelerator Centre, New Delhi.
- Two Days National Workshop on Ion Beam Induced Growth and Engineering of Materials, March 11-12, 2014 at Department of Physics, Kurukshetra University, Kurukshetra.
- Symposium on Recent Research Trends in Physics, March 01-02, 2014 at Kurukshetra University, Kurukshetra.

- 84th BRNS-IANCAS National Workshop on Radiochemistry and Applications of Radioisotopes, October 23-27, 2013 at Department of Physics, Kurukshetra University, Kurukshetra.
- One Week National Workshop on Advanced Characterization and Simulation Techniques, March 12-17, 2012 at Department of Physics, Kurukshetra University, Kurukshetra.
- 17th DAE-BRNS National Synopsis & Workshop on Thermal Analysis, March 09-13, 2010 at Kurukshetra University, Kurukshetra.