Name: Dr. Pooja Rani.

Designation: Assistant Professor

Specialization: Material Science and Nanotechnology

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Education

M.Sc. Physics (2008, Panjab University, Chandigarh),
UGC NET-JRF-2007
Ph.D. (7th Nov., 2014, Panjab University, Chandigarh)

Title of Ph. D Thesis- Stability. Structure and Electronic properties of Hetero-graphenes

Professional Experience:

Department of Physics, M.M. Modi College, Patiala, India (2nd Feb., 2016 to till date)

Department of Physics, D.A.V College, Sec-10, Chandgarh, India (15 July 2015 to 27 January 2016)

Department of Physics, D.A.V College Sec-10, Chandigarh, India(21 July, 2014 to 28 February 2015)

Department of Physics, G.G.D.S.D College Chandigarh (11 September 2013 to 28 February 2014)

Teaching Interests:

- Condensed Matter Physics
- Waves and Vibrations

Research Interest:

Material Science and Nanotechnology (Graphene and other 2-D materisls, Density Functional theory (DFT)

Publications

Papers in refereed international journals

1. Designing band gap of graphene by B and N dopant atoms,

Pooja Rani and V.K. Jindal RSC Advances, 802-812 (2013). Impact factor 3.8

ISSN- 2046-2069, https://doi.org/10.1039/C2RA22664B

2. Stability and electronic properties of isomers of B/N co-doped graphene

Pooja Rani and V.K. Jindal, Appl Nanosci., 4, 989-996 (2014).

ISSN 2190-5509, https://doi.org/10.1007/s13204-013-0280-3

3. DFT Study of optical properties of pure and doped graphene

Pooja Rani, Girija S. Dubey and V.K. Jindal, Physica E 62, 28–35 (2014).

ISSN-13869477, https://doi.org/10.1016/j.physe.2014.04.010

4. Structural and electronic properties of sulphur-doped boron nitride nanotubes

Sheetal Sharma, Pooja Rani, A.S. Verma, V.K. Jindal, Solid State Commu.152, 802–805 (2012).

ISSN-0038-1098, https://doi.org/10.1016/j.ssc.2012.01.038

5. Band gap modulation of B/Li doped Graphene

Pooja Rani, Rajiv Bhandari and V.K. Jindal, Adv. Sci. Lett. 21, 2826-2829 (2015)

ISSN: 1936-6612, https://doi.org/10.1166/asl.2015.6363

6. Theoretical investigation of structures and energetics of sodium adatom and its dimer on graphene: DFT study

Gagandeep Kaur, Shuchi Gupta, Pooja Rani, Keya Dharamvir, PhysicaE, 74(2015)87–92.

ISSN-13869477, https://doi.org/10.1016/j.physe.2015.06.014

7. Thermodynamic properties of pure and doped (B, N) graphene

Sarita Mann, Pooja Rani, Ranjan Kumar, Girija S. Dubey and V.K. Jindal

RSC Adv., 2016, 6, 12158-12168,

ISSN- 2046-2069 https://doi.org/10.1039/C5RA25239C,

2. Articles in Books

1. Al/P Codoping in graphene

Pooja Rani and Sheetal Sharma, NANOSCITECH-2012

Emerging Paradigms in Nanoscience, 851-855, Pearson ISBN: 978-81-317-8991-9

Edits- Ranbir Chander sobti, Anupama Kaushik, Surya Kant Tripathi

2. H2S adsorption on Graphene – A Density Functional Theory Study

   Pooja Rani and Sheetal Sharma, NANOSCITECH-2012

   Emerging Paradigms in Nanoscience,828-832, Pearson ISBN: 978-81-317-8991-9

   Edits- Ranbir Chander sobti, Anupama Kaushik, Surya Kant Tripathi

3. Papers in referred Conferences/Symposia proceedings

1. Structure and Stability of Pure and Doped Lithium Clusters (Lin and LinX, n = 2–8, X = B, Al) A DFT study

   Pooja Rani, Sheetal Sharma, and V. K. Jindal,

   ICACNM 2011, AIP Conf. Proc. 1393, 191 (2011); doi: 0.1063/1.3653674.

   ISSN: 0094-243X

2. Study of B and N doped graphene by varying dopant positions

   Pooja Rani and V. K. Jindal,

   56th DAE Symposium 2012, AIP Conf. Proc. 1512, 262 (2013); doi: 10.1063/1.4791011

3. Toluene Adsorption on Na-Graphene Interface- A DFT Study

   Pooja Rani and V. K. Jindal, Recent Trends in Applied Physics and Material Science (RAM 2013), AIP Conf. Proc. 1536, 389 (2013).

4. DFT Study of Defects in Graphene

   Pooja Rani an Rajiv Bhandari

   Proceedings of the International Conference on Advanced Nanomaterials and Emerging Engineering Technologies (ICANMEET 2013) ISBN: 978-1-4799-1377-0

5. Adsorption of silver dimer on Graphene- A DFT study

   Gagandeep Kaur, Suchi Gupta, Pooja Rani and Keya Dharmvir

   AIP Conf. 1591, 339 (2014)

6. DFT Study of B, N, and BN doped graphene

MRS Proceedings, 2014. **ISSN**: 1946-4274

7. DFT study of Phonon Dispersion in Pure Graphene

AIP Conference Proceedings **1675**, 030035 (2015); doi: 10.1063/1.4929251.

Conferences/Seminars/Webinars/Workshops/Training Courses Attended

1. Attended 2nd Chandigarh Science Congress and Presented a poster on 14-15th March 2008 held at Panjab University Chandigarh
2. Attended Technology Workshop on Optimizing Performances of Parallel Programs on Emerging Multi-Core Processors, GPUs, held in IIT Madras Chennai, June 2009
3. Attended Seminar cum Workshop on First Principles and other simulation Methods in Condensed Matter Physics. Held in HPU Shimla, -22-29th March 2010
4. Attended Workshop on "High Performance Computing, held at Inter University Accelerator Centre Chandigarh on 27-28th April, 2010
5. Presented paper titled "Structure and Stability of Pure and Doped Lithium Clusters (Lin and LinX, n = 2–8, X = B, Al) A DFT study" in International Conference on Advances in Condensed Matter Physics and Nanotechnology(ICACNM 2011) on Feb22, 23-26th 2011
6. Presented poster in International conference on Nanotechnology and nanomaterials held in Conference Centre, Delhi University, New Delhi, India on 18-21th Dec.2011
7. Presented Paper titled "Al/P Codoping in graphene" in International Conference on "Frontiers in Nanoscience, Nanotechnology and their applications" (NanosciTech 2012) held at UICET, P.U, Chandigarh, India on Feb 16-18, 2012
8. Attended 6th Chandigarh Science Congress (CHASCON 2012) held at Panjab University, Chandigarh, India on 26-28th Feb. 2012
9. Attended workshop on "Scientific Applications of the IUAC HPC facility" held at Inter University Accelerator Centre (IUAC), New Delhi, India in No. 2012
10. Presented paper titled "Study of B and N doped graphene by varying dopant positions" in 57th DAE Solid State symposium held at IIT Bombay, Mumbai, India
11. Presented paper titled "Toluene Adsorption on Na-Graphene Interface- A DFT Study" Recent Trend in Applied Physics and Material Science (RAM 2013) held at Govt. College of Engg. and Tech, Bikaner, India on 1st -2ndst Feb. 2013
12. Attended Workshop on "Parallel Computing Using HPCC held at Dept. of Physics, Panjab University, Chandigarh, India on 21-22 March 2013
13. Attended workshop on "Workshop on "Integrated computational Material Engineering" at Dept. of Material Science and Engg. IISc Banglore, India on 23-27th Dec. 2013
14. Attended One day Seminar on "Material science and Nanomaterials at G.G.D. S.D College, Sec-32, Chandigarh, on Ist Feb, 2014India

18. Participated in International seminar on " Current trends in Quantum gases, BEC and Solitons" held at Department of Physics, Panjab University Chandigarh from 3rd-6th March, 2014

19. Presented paper titled ". DFT Study of B, N, and BN doped graphene" in MRS Spring Meeting and Exhibit 2014 at **Moscone Convention Centre, San Francisco, USA on 21-25th April, 2014**
20. Presented paper titled "Band Gap Modulation of Graphene with Increasing Concentration of Li/B Doping"at IWCCMP-2014 (Workshop cum Conference) ABV-IITM, Gwalior, India on 25-30th Nov., 2015
21. Physics and Applied Mathematics Researchers Meet (PAMRM 2015) at ISI Kolkata on 15-17 March 2015.
22. Presented paper titled "Altering the Optical Properties of Graphene by (B, N) Doping. 8th National conference on Recent Advances in Chemical, Biological & Environmental Sciences (RACES), Feb 19-20, 2016, MM Modi College Patiala, Punjab, India.
23. Presented paper titled "Measurements of L3M resonant Raman scattering cross sections, at National Conference on Recent Trends in Physical, Chemical, Biological & Environmental Science, 21 March, 2016, Advance College of Science and Commerce, Ujjain, MP, India
24. Attended UGC Sponsored Faculty Development Program at Multani Mal Modi College, Patiala. (9-16 January, 2017)
25. Attended International Workshop on "Shock Waves in Science , Engineering and Medicine on 23-24th Feb, 2018 at Post Graduate Govt. College for Girls, Sec-11, Chandigarh.
26. Faculty Development Program on Contemporary Issues in Higher Education held at MM Modi College Patiala, July 20th -26th 2018.
27. Completed the course "Learning Physics through Simple Experiments" from Centre for continuing education, IIT Kanpur from April 2 to June 10.
28. Completed a 4-Week Induction/ Orientation Programme for Faculty in Universities/ Colleges/ Institutes of Higher Education organized by Ramanujan College, University of Delhi (June 4- July 1, 2020).
29. Completed a 2-Week online faculty development programme on "Advanced Concepts for Developing MOOCS" organized by Teaching Learning Centre (TLC), Ramanujan College in association with Research Development and Services Cell, Ramanujan College, University of Delhi (July 2-17, 2020)
30. Participated in the National Webinar on International Yoga Day organized by Gargi College under the aegis of IQAC, University of Delhi (June 21, 2020)
31. Attended One Week Faculty Development Program on Advancements in Science and its Applications in Engineering organized by Department of Science & Humanities, Hyderabad Institute of Technology & Management, Hyderabad (June 22-26, 2020).
32. Participated in Science Leadership Workshop organized by Central University of Punjab, Bathinda (June 22-28, 2020).
33. Participated in International Virtual Conference on Advanced Materials for Energy and Environmental Applications (ICAMEEA-2020) organized at Inetrnational Relationship Centre, Bharathidasan University, Tiruchirappalli, Tamil Nadu (June 26-27, 2020).

34. Participated in "National Capability Enhancement Conference: Education for Meaningful Life Part-3" organized by Punjab Commerce and Management Association (July 2, 2020).
35. Participated in Webinar on Nanotechnology: A Multidisciplinary Technology of 21st Century organized by Department of Physics, S.D. College, Barnala (July 10, 2020).
36. Participated in One day National Webinar on " The social and religious context of the martyrdom of Sri Guru Teg Bahadur Ji" organized by Multani Mal Modi College Patiala (July 16, 2020).
37. Completed a One Week online faculty development programme on "Exploring Science and Technology Interconnections"organized by Department of Applied Sciences, UIET Panjab University, Chandigarh (August3-8, 2020)
38. Attended National Webinar on Frontiers of Science & Technology in Defense organized by PG Department of Physics, Khalsa College, Patiala(August 07, 2020).
39. Participated in One Day Capacity Building Program on Basic Tools and Techniques for Online Teaching organized by Punjabi University, Patiala (August 09, 2020).
40. Participated in Internation Conference on Emerging Smart Materials in Applied Chemistry (ESCAM-2020) (August 10-12 , 2020).
41. Participated in the course Classical Electromagnetism-I by Centre for continuing Education, IIT Kanpur (August15-Dec13, 2020).
42. Attended One day National Webinar on the theme Hind di Chadar : Sri Guru Teg Bahadur organized by Punjabi University, Patiala (August 26, 2020).
43. Participated in National Webinar on Recent Advances in Material Sciences and Nano-Technology organized by Department of Physics, Ch. Chhotu Ram (P.G.) College, Muzaffarnagar, Uttar Pradesh (October 01, 2020).
44. Attended Five Day Online Lecture Series organized by P.G Department of Physics, Khalsa College, Patiala (Dec 22-26, 2020).
45. Joined course on Classical Mechanics-I by Centre for continuing Education, IIT Kanpur (Jan 26, 2021).

Workshops and training courses

1. Attended UGC Sponsored Faculty Development Program at Multani Mal Modi College, Patiala. (9-16 January, 2017)
2. Attended UGC Sponsored Faculty Development Program at Multani Mal Modi College Patiala (20-26th July, 2018)

Achievements, Awards and Recognitions

- Awarded UGC-JRF fellowship to carry out research during Ph.D

- Awarded DST travel grant for presenting Research paper accepted in MRS Spring Meeting & Exhibit 2014 **, San Francisco,** USA.

Membership

- Indian Physics Association
- High Energy and Materials Society of India (HEMSI)