

CURRICULUM VITAE

DR. MAHREEN AKRAM

Personal Details

Designation:	Assistant Professor
Date of Birth:	5 th April, 1988
Nationality:	Pakistani
Marital Status:	Married
E-mail ID:	mahrakram@gcu.edu.pk

Academic Qualifications

PhD (Physics)

Government College University Lahore Pakistan

2018

Thesis Title: " Laser induced surface structuring of metals correlated with breakdown spectroscopy and field emission properties

M.Phil (Physics)

Government College University Lahore Pakistan

2011

Thesis Title: "Pulsed Laser deposition of nanostructured ZnO thin films"

M.Sc (Physics)

Government College University Lahore Pakistan,

2008

B.Sc (Physics, Chemistry and Mathematics)

Government College University Lahore Pakistan,

2006

Job Experience

Working as Assistant Professor from Jan 2019 to till date at **Center for Advanced**

Studies in Physics (CASP), GC University, Lahore- Pakistan

Worked as an Lecturer from Nov 2009 to Jan 2019 at **Center for Advanced**

Studies in Physics (CASP), GC University, Lahore- Pakistan

Research Experience

- Laser induced plasma and its characterization
- Pulsed Laser Deposition of thin films (PLD)
- Laser induced micro and nano structuring of materials
- Laser induced breakdown spectroscopy (LIBS)
- Laser induced plasma ion implantation
- Field Emission properties

MPhil Supervision

- **Thesis 1:** Thermal plasma induced surface modification correlated with the field emission properties of Copper by Sajid Ali (2020-2022)
- **Thesis 2:** Surafec, structural and field emission properties of microplasma treated Brass by Asad Ali (2021-2023)
- **Thesis 3:** Surface, structural and mechanical modifications of Zinc after thermal plasma treatment by Sajid ghafoor (2022-2024)
- **Thesis 4:** Effect of external electric field on surface modifications and plasma parameters of laser irradiated Mg-alloy by Muhammad Nazeer Nisar Alam Khan (2023-2025)

MPhil Co-Supervision

- **Thesis 1:** Measurements of self-generated electric and magnetic fields of laser induced Aluminum plasma by Fida Hussain (2017-19)
- **Thesis 2:** Investigation and comparison of Si ion induced surface structuring of Ni and Ti for enhancement of field emission properties by Shahzeb Ahmed (2018-20)

- **Thesis 3:** Investigation of surface modifications and field emission properties of Si ion implanted Stainless Steel by Rizwan Amir (2018-20)
- **Thesis 4:** Investigation of laser induced Zirconium plasma parameters for self-generated electric and magnetic fields, Tayyaba Sajid (2019-21)
- **Thesis 5:** Measurement of self-generated electric and magnetic fields of spatially resolved Laser induced Magnesium plasma, Maira Razzaq (2019-21)
- **Thesis 6:** Field emission properties of Carbon ion irradiated Tungsten, Munim Sarwar (2019-21)
- **Thesis 7:** Thermal plasma treatment of Tin for the enhancement of field emission properties Syed Muhammad Kamran Shabbir (2020-22)
- **Thesis 8:** Surface modification of laser ablated Molybdenum correlated with field emission properties
- **Thesis 9:** Designing and fabrication of microplasma setup for surface structuring of Mg-alloy, Aiman Saif Ullah (2021-23)
- **Thesis 10:** Designing and fabrication of microplasma setup for surface structuring of Tin Muhammad Saqib Jamil (2021-23)
- **Thesis 11:** Thermal plasma treatment for surface structuring of Aluminium, Abdul Wahid Khan (2021-23)
- **Thesis 12:** Development of microplasma system for the surface modification of Titanium

Publications

List of publications

1- U. Kalsoom, S. Bashir, N. Ali, **M. Akram**, K. Mahmood, R. Ahmad, Appl. Sur. Sci. **261**, 101 (2012)

- 2- N. Ali, S. Bashir, U. Kalsoom, **M. Akram**, K. Mahmood, Appl. Sur. Sci. **270**, 49 (2013)
3. K. Mahmood, S. Bashir, M. K. Rahman, N. Farid, **M. Akram**, A. Hayat, F.U. Haq, Surf. Rev. Lett. **20**, 1 (2013)
4. D. Yousaf, S. Bashir, **M. Akram**, U. kalsoom, N. Ali, Rad. Eff. & Def. in Sol. **169**, 144 (2013)
5. M. Jelani, S. Bashir, M. K. Rehman, R. Ahamad, F. Haq, D. Yousaf, **M. Akram**, N. Afzal, M. U. Chaudhry, K. Mahmood, A. Hayat, S. Ahmad, Eur. Phys. J. D **67**, 159 (2013)
6. **M. Akram**, S. Bashir, A. Hayat, K. Mahmood, R. Ahmad, M. K. Rahman, Laser Part. Beams **32**, 119 (2014)
7. M. Jelani, S. Bashir , **M. Akram**, D. Yousaf, N. Afzal , S. Ahmad, Phys. Scr. **89**, 1 (2014)
8. S. Bashir, S. Khurshid , **M. Akram**, N. Ali, U. Kalsoom, S. Ahmad, , D. Yousaf , Qunat. Electron. **45** 640 (2015)
9. K. Mahmood, S. Bashir, **M. Akram**, A. Hayat, F.U. Haq, S. Saadat, Surf. Rev. Lett. **22**, 1 (2015)
10. **M. Akram**, S. Bashir, M. S. Rafique, A. Hayat, K. Mahmood, A. Dawood, M. F. Bashir, Appl. Phys. A **119**, 859 (2015)
11. A. Dawood, S. Bashir, **M. Akram**, A. Hayat, S. Ahmed, M. H. Iqbal, A. H. Kazmi, Laser Part. Beams, doi: 10.1017/S0263034615000312 (2015)
12. M. H. Iqbal, S. Bashir, M.S. Rafique, A. Dawood, **M. Akram**, K. Mahmood, A. Hayat, R. Ahmad, T. Hussain, A. Mahmood, Appl. Sur. Sci. **344**, 146 (2015)
13. A. Khalid, S. Bashir, **M. Akram**, A. Hayat, Lasers Med Sci. DOI 10.1007/s10103-015-1790-x (2015)

14. A. Hayat, S. Bashir, M. S. Rafique, **M. Akram**, K. Mahmood, S. Iqbal A. Dawood, Arooj Opt. and Spectrosc. 121, 1 (2016)
15. A. Hayat, S. Bashir, **M. Akram**, K. Mahmood, M. H. Iqbal Appl. Sur. Sci. **357**, 2415 (2015)
16. N. Yaseen, S. Bashir, M. K. Shabbir, S. A. Jalil, M. Akram, A. Hayat, K. Mahmood, F. U. Haq, R. Ahmad, T. Hussain Physica B 490, 31 (2016)
17. A. Arshad, S. Bashir, A. Hayat, M. Akram, A. Khalid, N. Yaseen, Q. S. Ahmad Appl. Phys. B **122:63**, (2016)
18. Q. S. Ahmed, S. Bashir, S. A. Jalil, M. K. Shabbir, K. Mahmood, **M. Akram**, A. Khalid, N. Yaseen, A. Arshad Nucl. Instru. Meth. Phys. 378, 1 (2016)
19. A. Khalid, S. Bashir, S. A. Jalil, **M. Akram**, A. Hayat, A. Dawood Optik. 127, 5128 (2016)
20. A. Hayat, S. Bashir, M. S. Rafique, **M. Akram**, K. Mahmood, S. Iqbal, A. Dawood, Arooj, Opt. Spectro. 121, 1 (2016)
21. **M. Akram**, S. Bashir, M. S. Rafique, A. Hayat, K. Mahmood, R. Ahmad Plasma Chem. Plasma Process. **37**, 287 (2017)
22. S. Waheed, S. Bashir, A. Dawood, S. Anjum, **M. Akram**, A. Hayat, S. Amin, A. Zaheer, Optik. **140**, 536 (2017)
23. H. Iftikhar, S. Bashir, A. Dawood, **M. Akram**, A. Hayat, K. Mahmood, A. Zaheer, S. Amin, F. Murtaza, Laser Part. Beams **35**, 159 (2017)
24. S. A. Jalil, S. Bashir, **M. Akram**, Q. S. Ahmed, F. U. Haq, Indian J. Phys. **91**, 953 (2017)
25. A. Hayat, S. Bashir, M. S. Rafique, R. Ahmed, **M. Akram**, K. Mahmood, A. Zaheer, T. Hussain, A. Dawood, Laser Part. Beams **35**, 313 (2017)
26. A. Hayat, S. Bashir, M. S. Rafique, R. Ahmed, **M. Akram**, K. Mahmood, A. Zaheer, Opt. Laser Technol. **97**, 60 (2017)

27. A. Hayat, S. Bashir, M. S. Rafique, R. Ahmed, **M. Akram**, K. Mahmood, A. Zaheer, Appl. Phys. A, **97**, 60 (2017)
28. S. Amin, S. Bashir, S. Anjum, **M. Akram**, A. Hayat, S. Waheed, H. Iftikhar, A. Dawood, K. Mahmood, Phys. Plasmas **24**, 083112 (2017)
29. K. Zehra, S. Bashir, S.A. Hassan, Q.S. Ahmed, **M. Akram**, A. Hayat Laser Part. Beams doi:10.1017/S0263034617000477 (2017)
30. **M. Akram**, S. Bashir, S.A. Jalil, M.S. Rafique, A. Hayat, K. Mahmood, Mater. Res. Express (2018)
31. **M. Akram**, S. Bashir, S.A. Jalil, M.S. Rafique, A. Hayat, K. Mahmood, Appl. Phys. A (2018)
32. K. Zehra, S. Bashir, S. A. Hassan, A. Hayat, **M. Akram** Optik 164 (2018) 186–200
33. M. K. Shabbir, S. Bashir, Q. S. Ahmed, N. Yaseen, S. A. Jalil, **M. Akram**, K. Mahmood, A. Khalid Surf. Rev. Lett Vol. 25, No. 02, 1850053 (2018)
34. M. A. Ali, S. Bashir, **M. Akram**, K. Mahmood, F. U. Haq, A. Hayat, G. Mutaza, N. A. Chishti, M. A. Khan, S. Ahmad Nuclear Inst, and Methods in Physics Research B 423 (2018) 7–15
35. S. A. Jalil, Q. S. Ahmed, **M. Akram**, N. Abbas, A. Khalid, A. Khalil, M. L. Khalid, M. M. Mehar, K. Riaz, M. Q. Mehmood Mater. Res. Express 5 (2018) 016410
36. **M. Akram**, S. Bashir, S. A. Jalil, M. Elkabbash, F. Aumayr, A. Ajami, W. Husinsky, K. Mahmood, M. S. Rafique, C. Guo Opt. Mater. Exp. **9**, 3183 (2019)
37. K. Mahmood, S. Bashir, F. U. Haq, **M. Akram**, A. Hayat, M. S. Rafique, A. Mahmood Nuclear Inst. and Methods in Physics Research B 448, 61 (2019)
38. R. Mushtaq, S. Bashir, K. Mehmood, U. Kalsoom, N. Ali, **M. Akram**, R. Ahmed, W. Ghani, S.M. Abuzar Sarfraz, Optik, 207 (2020) 163866

39. Z. Irfan, S. Bashir, S. H. Butt, A. Hayat, R. Ayub, K. Mahmood, **M. Akram** and A. Batool, *Laser Part. Beams* 38 (2020) 84-93
40. S. A. Jalil, **M. Akram**, J. A. Bhat, J. J. Hayes, S. C. Singh, M. ElKabbash, C. Guo *Appl. Surf. Sci.* 506 (2020) 144952
41. A. Batool, S. Bashir, A. Hayat, M. Akram, K. Mahmood, M. Javed, F. Hussain, S. H. Butt, H. Ahmad, Z. Irfan, A. Dawood, *Phys. Plasmas* 28, 013113 (2021)
42. F. Hussain, S. Bashir, **M. Akram**, S. H. Butt, K. Mahmood, M. Javed, Haroon Ahmad, *Appl. Phys. B* 127, 62 (2021)
43. M. Javed, S. Bashir, **M. Akram**, K. Mahmood, R. Ayub, F. Hussain, N. Fatma, M. Iqbal *Optik* 246, 167790 (2021)
44. S. Bashir, **M. Akram**, A. Hayat, W. Ghani, S. H. Butt, K. Mahmood, M. S. Rafique, U. Khalique, F. U. Haq *IEEE Transac. Plasma Sci.* 50 (2022)
- 45- R. Amir, S. Bashir, **M. Akram**, M. S. Rafique, M. Javed, K. Mahmood, W. Husinsky, S. Ahmad *Rad. Effects Defects Sol.* (2022)
<https://doi.org/10.1080/10420150.2022.2073882>
- 46- A. Kaleem, S. Bashir, **M. Akram**, R. Amir, K. Mahmood, M. S. Rafique, S. Naseem, S. Riaz, M. Sarwar, A. Tariq *Appl. Phys. A* 128:561 (2022)
- 47- R. M. Ayub, S. Bashir, K. Mahmood, A. Hayat, A. Ashraf, **M. Akram**, M. Javed, N. Fatima *Optik* (2022) <https://doi.org/10.1016/j.ijleo.2022.169566>
48. T. Sajid, S. Bashir, **M. Akram**, M. Razzaq, M. Javed, K. Mahmood *JOSA B* 39, 1986-2005 (2022)
49. S. Ahmad, S. Bashir, **M. Akram**, R. Amir, M. S. Rafique, W. Husinsky, M. Javed *Surf. & Interf. Anal.* 55, 113-126 (2022)
50. S. M. K. Shabbir, S. Bashir, **M. Akram**, M. S. Rafique, K. Mahmood, S. Naseem, S. Riaz, S. Ali, M. A. Afzal, M. Hamza, M. A. Mehmood, M. Sarwar, J. Mater. Sci. Mater. Electron. 34, (2023), 2244

51. M. Razzaq, S. Bashir , **M. Akram**, K. Mahmood, T. Sajid, M. Javed, M. Sarwar Results in Optics 10 (2023) 100335
52. T. Sajid, S. Bashir, **M. Akram**, M. Razzaq, K. Mahmood Plasma Sci.Technol. 26 (2024) 055507
53. R. M. Ayub, S. Bashir, A. Dawood, E. Bonyah, A. H. Ganie, K. Mahmood, N. A. Koka, A. Hayat, **M. Akram**, S. Z. H. Rizvi AIP Advances 14, (2024) 055212
54. S. Ali, **M. Akram**, S. Bashir, M. S. Rafique, S. Naseem, S. Riaz, S. M. K. Shabbir, A. Kaleem, M. A. Afzal, K. Mahmood, R. M. Ayub, M. Hamza, M. A. Mehmood, Surf. & Interf. Anal. 57 (2024) 52-69
55. M. Iqbal, K. Mahmood, S. Bashir, M. Javed, M. Akram Lasers in Manufact. & Mater. Process. (2025) <https://doi.org/10.1007/s40516-024-00273-6>
56. A.Ali, M. Akram , S. Bashir, K. Mahmood, S. Naseem, S. Jamil, A. Saif Ullah, A. Wahid, R. M. Ayub, and S. Akmal Eur. Phys. J. D 79:21(2025) 1-22
57. A. Kaleem, S. Bashir , M Akram, S. Ali, H. Rehman [Physica B: Condensed Matter](#) 417859 (2025)

Conference Participation

- 1.Delivered a talk on “Ion irradiation induced surface modification of metals for the enhancement of field emission properties” in **3rd International Conference on Advances in Materials Science** held on December 15-16, 2022Department of Physics, DSNT University of Education, Lahore, Pakistan
- 1-Delivered a talk on “Effect of substrate temperature on Pulsed Laser Deposition of ZnO thin Films" in **2nd National Conference on "RADIATION, PARTICLES AND MATTER"** jointly organized by Rafi. M. Chaudary Chair at CASP, GCU Lahore and Pakistan Academy of Sciences from 26-28 October 2010.

2- Presented a poster on “Effect of laser irradiance on the surface morphology and laser induced plasma parameters of zinc” in “**International Scientific Spring**” jointly organized by National Centre for Physics (NCP), Islamabad, Pakistan & The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy

3-Delivered a talk on “ Morphological and spectroscopic characterization of laser ablated tungsten for various laser irradiances” in “ **International Conference on Physics and Contemporary Needs**” organized by Physics Department and CASP at GC University Lahore Pakistan November 19-21, 2014.