

Name	<b>Dr. Abdul Jabbar</b>															
Point of Contact	<b>Postal Address:</b> Assistant Professor, Department of Physics, Mirpur University of Science & Technology (MUST) Mirpur Azad Jammu & Kashmir, Pakistan, <b>E-mails:</b> <a href="mailto:abduljabbar.phy@must.edu.pk">abduljabbar.phy@must.edu.pk</a>															
Experience	<table border="1"> <thead> <tr> <th>Date</th> <th>Title</th> <th>Institution</th> </tr> </thead> <tbody> <tr> <td>26-02-2022 to date</td> <td>Assistant Prof.</td> <td>MUST, Mirpur AJ&amp;K</td> </tr> <tr> <td>30-01-15 to 26-02-2022</td> <td>Lecture</td> <td>MUST, Mirpur AJ&amp;K</td> </tr> <tr> <td>22-03-12 to 30-01-15</td> <td>Junior Lecturer</td> <td>MUST, Mirpur AJ&amp;K</td> </tr> <tr> <td>01-10-11 to 22-03-12</td> <td>Lecturer (Visiting)</td> <td>MUST, Mirpur AJ&amp;K</td> </tr> </tbody> </table>	Date	Title	Institution	26-02-2022 to date	Assistant Prof.	MUST, Mirpur AJ&K	30-01-15 to 26-02-2022	Lecture	MUST, Mirpur AJ&K	22-03-12 to 30-01-15	Junior Lecturer	MUST, Mirpur AJ&K	01-10-11 to 22-03-12	Lecturer (Visiting)	MUST, Mirpur AJ&K
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<i>Honor and Awards</i>	<ul style="list-style-type: none"> <li>➤ Best Poster Presentation award in ISS-2018</li> <li>➤ HEC (Pakistan) IRSIP award</li> </ul>															
<i>Memberships</i>	Member Pakistan Physical Society (PPS)															
<i>Brief Statement of Research Interest</i>	<p>My research interests lie in the broad area of applied and experimental physics, with a current focus on fiber laser technology. My academic background in physics has provided me with a strong foundation in optics, laser physics, and light–matter interaction, which I now apply to the study and development of advanced fiber laser systems.</p> <p>At present, my research is centered on the design, characterization, and optimization of fiber lasers, with particular interest in improving their performance parameters such as output power, beam quality, spectral characteristics, and stability. I am also interested in exploring novel gain media, nonlinear effects in optical fibers, and efficient pumping schemes to enhance laser efficiency and tunability.</p>															

Publications	<p><b>Research Publications in the Impact Factor International Journals:</b></p> <ol style="list-style-type: none"> <li>1. Improving the stability of vanadium aluminum carbide (V<sub>2</sub>AlC) based saturable absorbers for Er-doped fiber lasers, Shakeela Bibi, <b>Abdul Jabbar</b>, Haroon Asghar and Rizwan Ahmed, laser physics 36 015102 (2026).</li> <li>2. Intensity Enhancement in Neutral and Singly Ionized Lines of Silver Using Electric and Magnetic Fields Assisted Laser</li> </ol>
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	<p>Induced Breakdown Spectroscopy <b>Abdul Jabbar</b>, Rizwan Ahmed, Muhammad Kamran, Haroon Ghani Chaudary, (2025, online as a preprint In Press).</p> <ol style="list-style-type: none"> <li>3. Valuation of theoretical and experimental thresholds fluences of pure metals using laser induced plasma spectroscopy (LIPS), Nasar Ahmed, Rinda Hedwig, Marincan Pardede, Koo Hendrik Kurniawan, <b>Abdul Jabbar</b>, Muhammad Aslam Baig, Laser Physics (2023).</li> <li>4. Detection of toxic and trace elements in the environmental samples around an indigenous refinery in Pakistan using LIBS, Shabnam Shahida, Nasar Ahmed, Saima Razzaque, <b>Abdul Jabbar</b>, Muhammad Rafique, Muhammad Imran Khan, Muhammd Hafeez and Muhammad Aslam Baig, Laser Physics 31 (10), 105601, (2021).</li> <li>5. Elemental Analysis of Cement and Its Components by Laser-Induced Breakdown Spectroscopy (LIBS) and Laser Ablation Time of Flight Mass Spectrometry (LA-TOF-MS), Mahmood Akhtar, Nasar Ahmed, Shaukat Mahmood, <b>Abdul Jabbar</b>, Rizwan Ahmed, Zeshan A. Umar, Javed Iqbal &amp; Muhammad Aslam Baig. (2021) DOI: 10.1080/00032719.2021.1972118</li> <li>6. Spectroscopic Investigation of Laser-Produced Strontium Plasma Using Fundamental and Second Harmonics of Nd:YAG Laser, <b>Abdul Jabbar</b> , Mahmood Akhtar, Javed Iqbal , Shaukat Mahmood , and Muhammad Aslam Baig, IEEE Transactions on Plasma Science 49 (5), 1564 – 1573, (2021).</li> <li>7. The electric field induced fluctuations in the laser generated plasma plume, Rizwan Ahmed, <b>Abdul Jabbar</b>, Zeshan Adeel umar and Muhammad Aslam baig, Plasma Science and Technology 23 (4), 045505, (2021).</li> <li>8. Elemental Analysis of Plants cultivated in the saline soil using laser induced breakdown spectroscopy (LIBS), <b>Abdul Jabbar</b>, Bushra Rehman, Mazhar Iqbal, Rizwan Ahmad, Shaukat Mehmood, MA Baig, Analytical Letters 54 (8), 1351-1365, (2020).</li> <li>9. Amelioration in the detection of Chlorine using electric field assisted LIBS, Rizwan Ahmad, <b>Abdul Jabbar</b>, Mahmood Akhtar, Zeesah Adeel Umar and M A Baig. Plasma Chemistry and Plasma Processing 40 (4), 809-818, (2020).</li> <li>10. Determination of Major Inorganic Nutrients in Maize Tissues by Calibration-Free Laser Induced Breakdown Spectroscopy, <b>Abdul Jabbar</b>, Mahmood Akhtar, Shaukat Mahmood,</li> </ol>
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Rizwan Ahmed & Muhammad Aslam Baig, Analytical Letters 53 (8), 1328-1341, (2020).

11. Quantification of Copper Remediation in Allium Cepa L. leaves using Electric Field Assisted Laser Induced Breakdown Spectroscopy, **Abdul Jabbar**, Mahmood Akhtar, Shaukat Mehmood, M. Iqbal, Rizwan Ahmed, M. A. Baig, Spectrochimica Acta Part B 162 (2019) 105719 .
12. On the detection of heavy elements in the Euphorbia indica plant using laser-induced breakdown spectroscopy and laser ablation time of flight mass spectrometry, **Abdul Jabbar**, Mahmood Akhtar, Shaukat Mehmood, Nasar Ahmed, Z. A. Umar, Rizwan Ahmed, M. A. Baig, J. Anal. At. Spectrom., 2019, 34, 954.
13. Elemental composition of rice using calibration free laser induced breakdown spectroscopy **Abdul Jabbar**, Mahmood Akhtar, Arslan Ali, Shaukat Mehmood, Sidra Iftikhar, M. A. Baig, Optoelectronics letters, Article ID: 1673-1905(2019)01-0057-7
14. Analytical Approach of Laser-Induced Breakdown Spectroscopy to Detect Elemental Profile of Medicinal Plants Leaves, **Abdul Jabbar**, Mahmood Akhtar, Shaukat Mehmood, Koo Hendrik Kurniawan, Rinda Hedwig, and M. A. Baig, Indones. J. Chem (2019) 19 (2), 430 – 440.
15. Calibration Free Analysis of Immersed Metal Alloys Using Long Pulse Duration Laser Induced Breakdown Spectroscopy, **Abdul Jabbar**, Zongyu Hou, Jiachen liu, Rizwan Ahmed, Shaukat Mahmood and Zhe Wang, Spectrochimica Acta Part B 157 (2019) 84-90.
16. Determination of major inorganic nutrients in maize tissues by calibration-free laser – induced breakdown spectroscopy, **A. Jabbar**, M. Akhtar, S. Mehmood, R Ahmed and M A Baig, Analytical Letters 2019 (Accepted).
17. Magnetic Field Enhanced Detection of Heavy Metals in Soil using Laser Induced Breakdown Spectroscopy, Mahmood Akhtar, **Abdul Jabbar**, Shaukat Mehmood, Nasar Ahmed, Rizwan Ahmed, M. A. Baig, Spectrochimica Acta Part B 148 (2018) 143–151
18. Magnetic field-induced signal enhancement in laser-produced lead plasma, Mahmood Akhtar, **Abdul Jabbar**, Shaukat Mehmood, Nasar Ahmed, Rizwan Ahmed, M. A. Baig, Laser and particle beams (2019) DOI:

	<p>10.1017/S0263034619000144.</p> <p>19. Analysis of lead and copper in soil samples by laser induced breakdown spectroscopy under External Magnetic field, Mahmood Akhtar, <b>Abdul Jabbar</b>, Shaukat Mehmood, Nasar Ahmed, Z. A. Umar, Rizwan Ahmed, M. A. Baig, Applied Physics B (2019) 125:110.</p> <p>20. Analytical Analysis of polluted Soil Samples using Magnetic Field Assisted Laser Induced Breakdown Spectroscopy and Time of Flight Mass Spectrometry Mahmood Akhtar, <b>Abdul Jabbar</b>, Shaukat Mehmood, Nasar Ahmed, Z. A. Umar, Rizwan Ahmed, M. A. Baig, Analytical Letters <a href="https://doi.org/10.1080/00032719.2019.1610417">https://doi.org/10.1080/00032719.2019.1610417</a></p> <p>21. Signal Intensity Enhancement by Cavity Confinement of Laser-Produced Plasma, Rizwan Ahmed, Mahmood Akhtar, <b>Abdul Jabbar</b>, Z. A. Umar, Nasar Ahmed, Javed Iqbal, M. A. Baig, IEEE Transactions on Plasma Science (2019) 47 (3), 1616-1620.</p> <p>22. Spectroscopic investigation of Laser Produced Strontium Plasma Using Fundamental and Second Harmonic of Nd:YAG laser, <b>A. Jabbar</b>, M. Akhtar, J. Iqbal S. Mehmood and M A Baig, IEEE Transactions on Plasma Science, Submitted 2019.</p> <p>23. Elemental Analysis of Stones using Laser Induced Breakdown Spectroscopy, S. Mahmood, M. Akhtar, <b>A. Jabbar</b>, J. Iqbal and M A. Baig, <a href="#">IEEE Transactions on Plasma Science</a> 43 (8) 2636-2641 (2015).</p>
<p>Selected Professional Presentations</p>	<p>1. Delivered an invited talk on the topic “<i>Determination of inorganic nutrients in wheat seed and plant using LIBS</i>” <b>12<sup>th</sup> International Symposium on Modern Optics and Its applications (ISMOA-2019) July 1-4 Jakarta, Indonesia.</b></p> <p>2. Delivered an invited talk on the topic 8th international Conference on Laser Matter Interaction (ILMI), September 23-24, 2024, at National Centre for Physics Islamabad Pakistan</p>