



USMAN MASOOD

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RESUME OBJECTIVE

Passionate and detail-oriented Assistant Research Officer with academic and practical experience in **agricultural sciences** and **biophotonics applications**. Skilled in conducting laboratory and field experiments, analyzing plant physiological responses using optical technologies, and supporting interdisciplinary research in crop health, remote sensing, and sustainable agriculture. Proficient in data analysis, scientific reporting, and assisting in grant-driven research projects. Committed to advancing agricultural innovation through precision research and cutting-edge photonic tools.

WORK EXPERIENCE

National Institute of Lasers & Optronics

ASSISTANT RESEARCH OFFICER (2019 - 2025)

During my tenure, I was actively involved in various R&D projects focused on the development and fabrication of the following devices:

- **GreenObserver**
This device monitors crop health and estimates the optimal urea fertilizer requirements at various stages of crop growth. I contributed by procuring components and participating in circuit design, component assembly, and field testing.
- **Photodynamic Therapy (PDT) System**
I was involved in assembling the PDT635 and other lasers designed for clinical applications.
- **Disinfection Units**
Contributed to the fabrication, modification, and testing of various UVC-based disinfection devices, including air, surface, and water sterilizers. Actively involved in device testing both in-house and in collaboration with medical institutions. Also supported the development, installation, and field testing of a UVC water sterilization system for a hospital dialysis unit.
- **Optical Seed Priming of Various Crops**
Assisted in the treatment of crop seeds using various light sources (e.g., laser diodes, LEDs, and UV light) at different energy levels. Conducted laboratory experiments using a Completely Randomized Design (CRD) and prepared seeds for field trials based on optimized treatment conditions.
- **Documentation & Reports**
In addition to technical responsibilities, I contributed to report preparation and project documentation, ensuring accurate recording of procedures, results, and technical data for internal records and external communication.
- **Laboratory Equipment**
Participated in the procurement of laboratory equipment and project-specific components, including identifying technical specifications, sourcing vendors, and coordinating with suppliers to ensure timely and cost-effective acquisition.

EDUCATION

BS-Physics	Preston University Islamabad	2014 -2018
FSc Pre-Eng	IMCB G-6/2 Islamabad	2013

PROFESSIONAL SKILLS

- Proficient in writing newsletters and handling departmental emails with professionalism and clarity.
- Strong communication, analytical, and presentation skills, with the ability to convey complex information effectively.
- Excellent team player who values collaboration and contributes positively to group dynamics.
- Demonstrated leadership capabilities with experience in guiding and coordinating team efforts.
- Skilled in data entry, documentation, and accurate record keeping with attention to detail.

SOFTWARE & TECHNICAL TOOLS

- **Autodesk Inventor** – Familiar with creating basic 3D models and technical drawings for academic or project documentation.
- **Proteus Professional** – Used for basic circuit simulation and schematic design in educational or lab-based settings.
- **Microsoft Visio Professional** – Used for creating flowcharts, organizational diagrams, and project planning visuals.
- **MATLAB (Basic proficiency)** – Assisted in simple data analysis, plotting graphs, and supporting research tasks.

SOFTWARE & DIGITAL SKILLS

- **Microsoft Office Suite:** Advanced Word processing, Excel spreadsheet creation (formulas, charts), and professional slide presentations.
- **Email & Communication Tools:** Experienced with Gmail, Outlook, and internal communication platforms.
- **Document Management:** Familiar with cloud tools like Google Drive and Dropbox for organizing and sharing research documents.
- **Basic Data Handling:** Able to use Excel and Google Sheets for simple data entry, sorting, and basic analysis.

LANGUAGES

- English
- Urdu
- Punjabi