Dr. Tousif Hussain

Associate Professor of Physics

Center for Advanced Studies in Physics (CASP), GC University Lahore, Pakistan

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PROFESSIONAL SUMMARY

Dynamic and accomplished physicist with over 15 years of experience in **Experimental Plasma Physics, Materials Science, and Nanotechnology**. Recognized for advancing research infrastructure, securing international collaborations, and mentoring graduate students. Published over **90 peer-reviewed papers** (cumulative impact factor: **193**, citations: **1,600)** in high-impact journals. Committed to academic leadership, innovative teaching, and fostering interdisciplinary research.

EDUCATION

- **Ph.D. in Physics (2012)** – GC University Lahore, Pakistan
  - **Thesis:** *Synthesis of Titanium-Based Nitride Thin Films by Plasma Focus* (Published as a book: LAP Lambert Academic Publishing, 2012)
- **M.Phil. in Physics (2007)** – GC University Lahore, Pakistan
- **M.Sc. in Physics (2002)** – University of Agriculture, Faisalabad, Pakistan
- **B.Sc. in Physics & Mathematics (2000)** – GC University Faisalabad (PU), Pakistan

PROFESSIONAL EXPERIENCE

- **Associate Professor (Tenured)** – CASP, GC University Lahore (August 2019 – Present)
- **Assistant Professor** – CASP, GC University Lahore (April 2012 – August 2019)
- **Lecturer (Visiting)** – GC University Lahore (March 2007 – April 2011)
- **Research Associate** – University of Saskatchewan, Canada (2010)

TEACHING & MENTORSHIP

- Taught undergraduate and graduate courses for BS, M.Phil., and Ph.D. programs.
- Initiated research collaborations and designed specialized courses.
- **Supervision:** Successfully supervised **17 M.Phil.** and **3 Ph.D.** students. Currently advising **5 Ph.D.**, **2 M.Phil.**, and **12 BS Physics** students.
- **Curriculum Development:** Designed the course *Energy Storage and Conversion* and developed lab modules for plasma physics and materials characterization.
- **Research Leadership:** Established **Experimental Plasma Lab** and **Energy Storage & Conversion Lab**, acquiring in-house equipment (e.g., Potentiostat, plasma systems).

GRANTS & COLLABORATIONS

- Led **HEC-funded projects** and international collaborations with institutions such as **King Saud University, Saudi Arabia** and **Prof. Kong's Nanophysics Lab, SKKU, Korea**.
- Managed the **University Instrument and Maintenance Laboratory (UIML)**, overseeing SEM, FTIR, and Plasma Processing Labs.
- Served as **Controller of Examinations** and **Member, Board of Studies**.

RESEARCH EXPERTISE

- **Focus Areas:** Plasma physics, nanomaterials, energy storage (supercapacitors, hybrid perovskites), photocatalytic degradation, thin-film deposition.

- **Technical Skills:** Plasma Focus Devices, Magnetron Sputtering, SEM, XRD, AFM, Raman Spectroscopy, Electrochemical Characterization (CV, EIS).
- **Key Achievements:**
    - Developed an indigenously designed **DC/RF Magnetron Sputtering System** (3-inch target).
    - Co-authored book chapter: *Plasma Focus Device: A Novel Facility for Hard Coatings* (Springer, 2017).

PUBLICATIONS & RESEARCH IMPACT

- **90+ publications** in high-impact journals, including:
    - *Ceramics International* (IF: 4.5)
    - *Journal of Alloys and Compounds* (IF: 5.3)
    - *Applied Surface Science* (IF: 4.4)
    - *Journal of Applied Electrochemistry* (IF: 2.7)
- **Citation Metrics:**
    - **Citations:** 1,600
    - **h-index:** 20
    - **i10-index:** 49
- **Google Scholar Profile:** scholar.google.com/citations?user=GM_XeoQAAAAJ

Selected Recent Publications:

- **Enhanced photocatalytic degradation of organic pollutants using rGO-supported $ZnFe_2O_4$ nanocomposites under natural sunlight** – *Materials Chemistry and Physics* (2024).
- **Design and characterization of hybrid perovskite-based supercapacitors for energy storage applications** – *Electrochimica Acta* (2023).
- **Chemically synthesized cobalt oxide incorporated copper hexacyanoferrate composite as an efficient supercapacitor electrode material** – *Journal of Applied Electrochemistry* (2023).

- **Natural sunlight-driven photocatalytic degradation of methyl blue using spinel $MgAl_2O_4$-rGO nanocomposite** – *Applied Nanoscience* (2022).

AWARDS & HONORS

- **HEC-Approved Ph.D. Supervisor** (2012)
- Recipient of **Indigenous Ph.D. Scholarship** & **IRSIP Scholarship**
- **External Examiner** – Conducted Ph.D. viva voce at University of Karachi (2013)

PROFESSIONAL AFFILIATIONS

- Member, **Pakistan Physical Society**
- Reviewer for many impact-factor Journals and served as External examiner in M.Phil. PhD

LANGUAGES & SKILLS

- **Languages:** English (Fluent), Urdu (Native), Punjabi (Native)
- **Soft Skills:** Leadership, problem-solving, cross-cultural collaboration

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