



Ali Yazdan

PhD. Eng., MIMMM

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Personal statement

I am a very ambitious professional seeking outstanding opportunities in materials science and engineering. I have focused on the synthesis of innovative metallic structures (3D printed) and multi-principal element (MPE) alloys designed for plastic and metallic recycling applications, thereby advancing the circular economy in Spain and the UK. My work entails the design and creation of new materials with improved mechanical, thermal, and catalytic capabilities to optimize recycling processes, minimize waste, and foster sustainable resource utilization. Utilizing advanced methodologies in alloy development and material characterisation, I have effectively created solutions that tackle the obstacles of recycling intricate waste streams, promoting environmental sustainability and economic advancement. This research corresponds with the overarching objectives of sustainability, facilitating both nations' progression towards a zero-waste future. I am a highly motivated materials researcher dedicated to excellence in the fabrication of new materials for diverse applications.

Lately, I am employed as a Postdoctoral Researcher on an EU project at Universidad Rey Juan Carlos in Madrid, Spain. I formerly served as a Researcher on the EPSC project 'Circular Metals' at the Brunel Centre for Advanced Solidification Technology (BCAST), Brunel University London. I supervise the Lime Room Lab at the Circular Metals Centre and am responsible for sample preparation, installation, operation, and troubleshooting of various equipment listed in the abilities section below. I possess strong competencies in synthesizing, characterizing, and analyzing materials, as well as independently devising and executing experiments.

For nearly eight years, I've worked in a variety of Materials Science, Engineering, and Physics Departments as a Research Scholar, Visiting Assistant Professor, IPFP Fellow, and Research Technician. Recently, I'd like to advance my career by applying for this exciting chance advertised at this prominent organization.

Key Equipment's Skills

I have acquired particular set of skills on the following equipment's in the **State Key Laboratory of New Ceramics and Fine Processing**, Tsinghua University, **Beijing**, and Brunel Centre for Advanced Solidification Technology (BCAST), Brunel University London, **London**, and Escuela Superior de Ciencias Experimentales y Tecnología (ESCET), URJC, **Madrid**, Spain.

- **Induction Heating System** Easyheat Ambrell 8310

- **3D Printer** S-Titanium Pro L-PBF, Aurora Labs
- **Magnetometer** PCE-MFM 2400
- **Arc Melter** ARC 200
- **Mini Arc Melter** MAM-1
- **Induction Melting Unit**
- **Ball Milling** Mixer Mill MM 500 Nano
- **Vacuum Heating Furnace** Thermic Edge
- **SEM** Scanning Electron Microscopy
- **XRD** X-ray Diffraction Analysis
- **TEM** Transmission Electron Microscopy
- **TGA** Thermogravimetric Analysis
- **DSC** Differential Scanning Calorimetry Analysis
- **FT-IR** Fourier Transform Infrared Spectroscopy Analysis
- **Raman** (Raman Spectroscopy) Analysis
- **LFA** (Laser Flash Apparatus)

Key Digital Skills

- **Origin** Pro 2015, **MDI** Jade,
- **XPS** Peak 4.1,
- **Image J** Particle Analysis,
- **Micro-structural** Analysis,
- **MS** Office 2016, MS Word 2016, MS Excel 2016, MS Powerpoint 2016
- **Adobe** Illustrator / Photoshop C6

Research & Teaching Experience

Postdoctoral Research Associate, Universidad Rey Juan Carlos, Madrid, ES

(April 2024 – to date)

Achievements and responsibilities:

- Designing Experiments and Leading Research Activities @ URJC, Móstoles
- Development and Printing Metallic Structures by 3D Printer Additive Manufacturing
- High Temperature Measurements by Novel Induction Heating Technology
- Characterization Microstructural, Mechanical, and Thermal analysis
- Organizing International Conferences @ URJC and supervising most of the tasks
- Supervising Organizing Meetings and Representation of Results
- Maintenance/Testing of the Equipment
- Manuscripts, and Reports Writing
- Assisting Staff, Research Fellows, and PhD Researchers

Circular Metals Research Technician, Brunel University London, London, UK

(December 2022 – March 2024)

Achievements and responsibilities:

- Designing and Leading Research @ BCAST and Circular Metals Centre
- Development of Multi-Principal Elemental Alloys (MPEA) by Powder Metallurgical Techniques
- Characterization, Microstructural, and Mechanical Analysis
- Supervising Organizing Meetings and Representation of Results
- Leading Research Personal responsible for various equipments
- Equipment Testing and Maintenance
- Standard Operating Procedures (SOPs) writings
- Manuscripts and Reports Writing
- Assisting Staff, Research Fellows, and PhD Researchers

IPFP Fellow (Interim Placement of Fresh PhDs), Higher Education Commission (HEC), Department of Physics, University of Sargodha, Sargodha, PK
(December 2021 – August 2022)

Achievements and responsibilities:

- Undergraduate teaching in the areas of thermodynamics, mechanics, and modern physics.
- Creating flexible, interactive, student-centred learning environments that make use of appropriate technologies.
- Contributing to overall course development through the incorporation of new trends in innovative teaching strategies and approaches.

Visiting Assistant Professor (Physics), Department of Physics, University of Sargodha, Sargodha, PK
(October 2021 – December 2021)

Achievements and responsibilities:

- Same as IPFP Fellow

Ph.D. Research Scholar, Tsinghua University, Beijing, CN
(September 2016 – January 2021)

Achievements and responsibilities:

- Synthesis
- Ceramic Fillers
- 2D Materials
- Boron nitride nanosheets (BNNSs)
- 1D Materials
- Boron nitride nanotubes (BNNTs)
- Boron nitride fibers (BNFs)
- Polymer Matrixes
- Hydrogels
- Highly stable emulsion
- Polyethylene oxide (PEO) fibers (crystalline)
- Polymeric composites
- BN/Agarose Hydrogel Composites
- Emulsion-based Thermal Pastes
- Characterization
- State Key Laboratory of New Ceramics and Fine Processing, Tsinghua University
- Key Laboratory of Advanced Materials (MOE), Tsinghua University

Teaching Assistant, Tsinghua University, Beijing, CN
(September 2019 – August 2020)

Achievements and responsibilities:

- Collaboration with faculty and students.
- Organizing and supervising student meetings.
- Helped the head teacher and students stick to their learning plans.
- Assist in the creation of a vibrant learning environment.
- Supervising and assisting students with the preparation of articles and assignments.

Awards & Honors

1. Postdoctoral Fellowship, Universidad Rey Juan Carlos, Madrid, Spain
2. CircularMetals Research Centre Fellowship, Brunel University London, London, United Kingdom
3. High Potential Individual (HPI) Visa, Government of United Kingdom
4. IPFP Fellowship (Interim Placement of Fresh PhDs), Higher Education Commission (HEC) of Pakistan, Islamabad, Pakistan
5. CSC Scholarship from Chinese Scholarship Council (CSC), China

Publications

1. **A. Yazdan**, B.K. Hu, C.W. Nan, L.L. Li. Synthesis of polycrystalline boron nitride nanotubes with lead oxide and iron nitrate nonahydrate promoters, *Phys. E Low Dimens. Syst. Nanostruct.* 133 (2021) 114788.
2. **A. Yazdan**, J.Z. Wang, C.W. Nan, L.L. Li. Rheological behavior and thermal conductivities of emulsion-based thermal pastes, *J. Electron. Mater.* 49 (2020) 2100 – 2109.
3. **A. Yazdan**, J.Z. Wang, B.K. Hu, W.S. Xie, L.Y. Zhao, C.W. Nan, L.L. Li. Boron nitride/agarose hydrogel composites with high thermal conductivities, *Rare Met.* 39 (2020) 375 – 382.

Certifications & Awards

- Recipient of a Chinese Government Scholarship (CGS) for Ph.D. studies from 2016 to 2020, as approved by the Chinese Scholarship Council (CSC).
- National Faculty Development Program (NFDP) 2021 Certificate of Achievement awarded by National Academy of Higher Education (NAHE), Higher Education Commission (HEC), Islamabad, Pakistan. (Certificate ID: V0CW1)

Membership & Affiliations

Member (MIMMM) IOM3

Institute of Materials, Minerals, and Mining

Registration Number: 695355

Valid from: 10-10-2023

End date: 31-12-2024

<https://www.iom3.org/>



Education

Doctor of Philosophy in Engineering (Ph.D.) Materials Science and Engineering, Tsinghua University, Beijing, CN

(September 2016 – January 2021)

CGPA: 3.7 / 4.0

Project / Thesis Title – Boron Nitride Materials and their Composites with High Thermal Conductivities

**Master of Philosophy (M.Phil.) Physics, Riphah International University,
Islamabad, PK**

(September 2011 – July 2014)

CGPA: 3.78 / 4.0

Project / Thesis Title – Monte Carlo Study of the Detector response to Gamma Radiations of Various Energies for Point and Disk Sources using GEANT4 Codes

**Post Graduate Diploma (Computer Science), Allama Iqbal Open University,
Islamabad, PK**

(August 2009 – September 2010)

Master of Science (M.Sc.) Physics, University of the Punjab, Lahore, PK

(September 2005 – December 2009)

Conferences & Seminars

- **Conference on the Topics Related to the Strategic Lines of ITPS**
(October 02, 2024. Madrid, Spain)
- **Conference on Sustainability and Innovation in Polymers and Composite Materials**
(September 30, 2024. Madrid. Spain)
- **Future Metallurgy 2023**
(March 26-27, 2023. London. United Kingdom)
- **The 4th Tsinghua University and the University of Tokyo Joint Multidisciplinary Symposium**
(May 27-31, 2019. Beijing. China)
- **The 5th International Conference on 2D Materials and Technology**
(October 21-24, 2019, Suzhou, China)
- **Doctoral Forum, Experiencing China-Sun Island International Materials Forum**
(October 25-27, 2019, Harbin, China)

References

References are available upon request.