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Academic Career

- Ph.D. (Functional Materials and Devices), The University of Sheffield, Sheffield, England, UK, in 2017.
- M.E. (Materials) from NED University of Engineering & Technology Karachi Pakistan in 2009.
- B.E. (Metallurgy) from Mehran University of Engineering & Technology, Jamshoro Pakistan in 2003.

Teaching Experience

- Assistant Professor in Materials Engineering Department of NED University of Engineering and Technology, Karachi (from 22nd June 2010 to date).
- Lecturer in Materials Engineering Department of NED University of Engineering and Technology, Karachi (from 2nd July 2007 to 21st June 2010).

Taught the following subjects:

- MM-204: 'Engineering Ceramics and Refractory Materials'
- MY -204: 'Refractory Materials in Metallurgical Industries'
- MM-302: 'Crystallography and X-ray Diffraction Techniques'
- MM-402: 'Design and Selection of Materials'
- MM-406: 'Electronic, Magnetic and Optical Materials'
- MM-409: 'Biomedical and Functional Materials'
- MM-502: 'Production of Ferrous and Non-Ferrous Materials'
- MM-532: 'Ceramic Engineering'

Job Experience

Assistant Manager: Melting Shop (Ladle Furnace) Peoples Steel Mills Ltd.
From June 2004 to June 2007:

- Experience of alloying and refining of different types of Steel Alloys, i.e. extra low carbon, low carbon, medium carbon, high carbon, low alloy, medium alloy and high alloy steels.

Q.C Engineer: (computerized ultrasonic testing), Shashi Steel Pipe Works Pvt. Ltd. From March 2004 to June 2004:

- worked to check the lamination, internal flaws, voids etc. of steel pipes of different dia.

Research Interest

- Piezoelectric Ceramics in general
- Multilayers Capacitors and Actuators
- Ceramic Materials: synthesis, characterization and application
- Carbon Nano Tubes and graphene
- Li Ion Battery Materials

Trainings and Workshops Attended

- Training on Laser Particle Analyser and Photospectrometer from China , Dec. 2010
- Three Days Certificate course on Solar Energy from CCEE, NED, Dec. 2010.
- Training on Hardness testers of various kinds from Shanghai China, January 2008
- Certificate course on Cathodic Corrosion protection 2009 from NED University
- Certificate course on MATLAB from NED University
- 2- Days Workshop on "Smart Materials" at NCP Islamabad in 2009.
- One Day Workshop on "Nanomaterials and Characterization Techniques" GC University

Lahore in 2010.

- 2- Days workshop on "Vacuum and Thin Film Technology" NINVAST, NCP Islamabad in 2010.
- **Fayaz Hussain**, Iasmi Sterianou, Derek C Sinclair, Ian M Reaney, *Properties of $K_{0.50}Na_{0.50}NbO_3$ Sintered in N_2 and Air*, Ferroelectrics UK, 17-18 January 2013, IOP, University of Sheffield, Sheffield, UK.
- **Fayaz Hussain**, Iasmi Sterianou, Derek C Sinclair, Ian M Reaney, *Semiconductor Behaviour of $K_xNa_{(1-x)}NbO_3$ ($0.49 \leq x \leq 0.51$) as a function of $P(O_2)$* , Electroceramics-XIV Conference, 16-20 June 2016, Bucharest, Romania.
- Shunsuke Murakami, Amir Khesro, **Fayaz Hussain**, Dawei Wang, Derek C Sinclair and Ian M Reaney, "*Doping Effects in Lead-free Piezoelectric BT-BF based Ceramics*", Sustainable Functional Materials April 2016, Scarborough, UK
- Dawei Wang, **Fayaz Hussain**, Amir Khesro, Antonio Feteira, Ye Tian and Ian M Reaney, "*Composition and Temperature Dependence of Piezoelectricity in KNN-based Lead-free Ceramics*". 2016 Joint IEEE International Symposium on the Applications of Ferroelectrics, European Conference on Applications of Polar Dielectrics, Darmstadt Germany.
- **Fayaz Hussain**, Ashraf Ali, "Elastic and Plastic Properties of Soda Lime Glass by Micro Indentation", ISAM 2009, Pakistan.

- **Hussain, F.**, et al., *p-Type/n-type behaviour and functional properties of $K_xNa(1-x)NbO_3$ ($0.49 \leq x \leq 0.51$) sintered in air and N_2* , Journal of the European Ceramic Society (2018), <https://doi.org/10.1016/j.jeurceramsoc.2018.03.013>
- Kausar Harun, **Fayaz Hussain**, et al., *Sol–gel synthesized ZnO for optoelectronics applications: a characterization review*, Materials Research Express, 2017.04(12).
- Wang, D., **Hussain, F**, Khesro, A, et al., *Composition and temperature dependence of piezoelectricity in $(1-x)(K_{1-y}Na_y)NbO_3-x(Bi_{1/2}Na_{1/2})ZrO_3$ lead-free ceramics*. American Ceramic Society, 2016: p. 1-9
- Khesro, A., Wang, D, **Hussain, F**, et al., *Temperature Stable and Fatigue Resistant Lead-free Ceramics for actuators*, Applied Physics Letters, 2016. 109(14).
- S. Sami-Ullah, S.M.H. Waqar, **F. Hussain**, A. Ali, "*Synthesis of Single and Multi-Walled Carbon Nanotubes by Improved Arc Discharge Method*", Key Engineering Materials, Vols. 510-511, pp. 124-131, 2012.
- **F.Hussain**, Ashraf Ali, "*Elastic and Plastic properties of Soda lime Glass by MicroIndentation*", Key Engineering Materials Vol. 442 (2010) pp

294-300, Trans Tech Publications, Switzerland.