

EDUCATIONAL QUALIFICATIONS

- **Ph.D. in Mechanical Engineering (2009)** – University of Maryland Baltimore County (UMBC), Maryland, USA.
Thesis Title: The responses of Engineering Materials, Anisotropy and Forming Limit Diagrams including the effects of Strain-Rate and Temperature.
- **M. S. in Mechanical Engineering (2002)** – University of New Orleans (UNO), Louisiana, USA.
- **B. S. in Mechanical Engineering (1997)** – Osmania University, Hyderabad, INDIA.

WORK EXPERIENCE

- Assistant Professor at Advance Manufacturing Institute-Center of Excellence for Research in Engineering Materials, King Saud University (2010 - Present).
- Research Scientist at Creative Systems Design LLC, USA (2009-2010).
- 3D design Engineer at Hindustan Engineering Corporation, India (1997-2000).

TEACHING

- **Teaching in Mechanical Engineering Department at King Saud University:**
ME 657: Experimental Stress Analysis (Graduate Level)
ME 654: Advanced theory of Fracture (Graduate Level)
- **Teaching in Mechanical Engineering Department at UMBC:**
ENME300: Introduction to Mechanical Design (Undergraduate Level)
ENME332 and 332L: Introduction to Solid Mechanics (Undergraduate Level)
- **Graduate Teaching Assistant @ Dept of Mechanical Engineering**
(1) Assisted the instructor in delivering the material for mechanical design class. Independently delivered lecture for lab sessions on Pro E 2001. Prepared mid-term and final exams and evaluated them.
(2) Lead teaching assistant for mechanics of materials and solid mechanics laboratory course. Performed one set of experiment during each lab to demonstrate the particular laboratory equipment.
Equipment/software: Hydraulic Material Testing System (MTS), Tinius Olsen buckling load tester, pressure vessel, Charpy impact tester, Rockwell Hardness tester, strain gage, Excel 2000, and Pro E 2001.

RESEARCH

- **Research Projects Undertaken at King Saud University:**

1. Project Title: Developing a nano-composite of Polypropylene with incorporation of nano-TiO₂ for industrial pails. (Project Dates: February 2015 - February 2016).

2. Project Title: Production of superior strength Aluminum Alloys for High-Temperature Applications using Mechanical Alloying. (Project Dates: January 2014 – January 2016).

3. Project Title: Prediction of residual stresses present in the spiral-welded pipes. (Project Dates: January 2012 - June 2013).

4. Project Title: Precipitation-hardened 6082 Aluminium alloy processed via equal channel angular pressing and subjected to different aging treatments: Experimentation and Modeling at different strain-rates and temperatures, (Project Dates: February 2011 - April 2013).

5. Project Title: Fracture assessment of API grade line pipe steels produced at Hadeed, SABIC (Project Dates: May 2010 - January 2012).

6. Project Title: Development of Split Hopkinson Pressure Bar experimental setup at King Saud University, CEREM (Project Dates: January 2010 - January 2012).

- **Approved Project**

1. Project Title: Characterization of an Aluminum Alloy processed using Equal Channel Angular Pressing (ECAP) + rolling over wide range of strain rates and temperatures (Project Dates: March 2015 – March 2017).

- **Other Research Projects:**

1. Project Title: Uni-axial thermo-mechanical response of HNBR (Nitrile polymer) at different loading rates and temperatures (Halliburton Energy Services, USA).

2. Project Title: Weld metal ductility in Aluminum Tailor Welded Blanks (Pacific Northwest National Laboratory and US Department of Energy).

3. Project Title: Anisotropy of AA 5182 (aluminum alloy used in automotive industry) and their application to Forming Limit Diagrams (FLD).

4. Project Title: Dynamic shear and multi-axial thermo-mechanical response of OFHC Copper.

PATENTS

- Appa Muniswamappa, Si Li, **Muneer Baig**, Ashwini Anjanappa. “Multiple Slope or Multiple or Multiple Offset Tool Mechanism” Publication # US20150068370 A1, Publication Date: Mar 12, 2015.
- Appa Muniswamappa, Si Li, **Muneer Baig**, Ashwini Anjanappa. “Multiple Slope or Multiple or Multiple Offset Tool Mechanism” Publication # US20110314976 A1, Publication Date: Dec 29, 2011.

PUBLICATIONS (Intl. Journals and Conference Proceedings)

- **Muneer Baig**, Magdy El-Rayes, Sohail Mazhar Ali Khan. "Evaluation of residual stresses in the spirally welded API grade pipeline steel using the hole drilling method". Submitted to International Journal of Pressure Vessels and Piping– December 2015- under review.
- **Muneer Baig**, Ehab El-Danaf. "Thermo-Mechanical large deformation study on 6082 Al alloy including the combination of aging treatment and ECAP process". Submitted to Materials and Design– November 2015- under review.
- **Muneer Baig**, Hany R. Ammar, Asiful H.Seikh. "Thermo-Mechanical Responses of Nanocrystalline Al-Fe Alloy Processed Using Mechanical Alloying and High Frequency Heat Induction Sintering". Material Science and Engineering A, Vol. 655, February (2016), Pages 132-141.
- **Muneer Baig**, Hany R. Ammar, Asiful H.Seikh, Jabair A. Mohammad, Mohammed A. Alam. "Effect of different compaction and sintering conditions on the thermo-mechanical properties of bulk aluminum produced using mechanical alloying", Advances in Materials Processing Technology, Accepted Manuscript (2015), In Press.
- Sohail Khan, Asiful Hossain Seikh, **Muneer Baig**, Magdy El-Rayes. "Electrochemical Corrosion Behavior of Spirally-welded API X-70 Line-pipe Steel in Acidic and Salt Media". Manufacturing Science and Technology, Accepted Manuscript (2015), In Press.
- Asiful H.Seikh, **Muneer Baig**, Hany R. Ammar. "Corrosion Behavior of Nanostructure Al-Fe Alloy Processed by Mechanical Alloying and High Frequency Induction Heat Sintering". International Journal of Electrochemical Science, Vol. 10, February 2015, Pages 3054-3064.
- **Muneer Baig**, Ehab El-Danaf, Abdulhakim Almajid, Waleed Alshlfan, Khaled Alhajeri "Fracture toughness and mechanical characterization of X70 API grade pipe-line steel", Journal of Mechanical Testing/Materialography, Vol. 57, September 2015, Pages 1-7.
- Akhtar S. Khan, **Muneer Baig**, Shi-Hoon Choi. "Quasi-static and Dynamic Responses of AA5182-O Base and Welded Materials: Experiments and Modeling", Journal of Dynamic Behavior of Materials, Vol. 1, June 2015, Pages 299-314.
- **Muneer Baig**, Hany Rizk Ammar, Asiful Hossain Seikh, Mohammad Asif Alam, Jabair Ali Mohammed. "Effect of consolidation and sintering parameters on the mechanical responses of nanocrystalline Al-Fe alloy processed by Mechanical Alloying", Applied Mechanics and Materials Vols. 719-720, January 2015, Pages 87-90.
- **Muneer Baig**, Ehab El-Danaf, Jabair A. mohammad. "Thermo-mechanical responses of an Aluminum alloy processed by Equal Channel Angular Pressing (ECAP) - Experiments and Modeling", Materials and Design, Vol.57, May 2014, Pages 510-519.
- Ehab El-Danaf, Megumi Kawasaki, Magdy El-Rayes, **Muneer Baig**, Jabair Ali Mohammed, Terence G. Langdon. "Mechanical properties and microstructural evolution in an aluminum 6082 alloy processed by high pressure torsion", Journal of Material Science, Vol. 49(19), October 2014, Pages 6597-6607.
- **Muneer Baig**, Akhtar S. Khan, Shi-Hoon Choi, S.H., Aron Jeong. "Shear and multiaxial responses of oxygen free high conductivity (OFHC) copper over wide range of strain-rates and temperatures

and constitutive modeling", International Journal of Plasticity, Volume 40, January 2013, Pages 65-80.

- Ehab El-Danaf, **Muneer Baig**, Abdulhakim Almajid, Waleed Alshalfan, Marawan Al-Mojil, Saeed Al-Shahrani. "Mechanical, microstructure and texture characterization of API X65 steel", Materials & Design, Volume 47, May 2013, Pages 529-538.
- Ehab A. El-Danaf, **Muneer Baig**. "High temperature deformation characteristics of equal channel angular pressed AA6082-T6", Materials Science and Engineering: A, Volume 565, 10 March 2013, Pages 301-307.
- Akhtar S. Khan, **Muneer Baig**, Shi-Hoon Choi, Hoe-Seok Yang, Xin Sun. "Quasi-static and dynamic responses of advanced high strength steels: Experiments and modeling" International Journal of Plasticity, Volumes 30–31, March 2012, Pages 1-17.
- Akhtar S. Khan, **Muneer Baig**. "Anisotropic responses, constitutive modeling and the effects of strain-rate and temperature on the formability of an aluminum alloy", International Journal of Plasticity, Volume 27, Issue 4, April 2011, Pages 522-538.
- Akhtar S. Khan, **Muneer Baig**, Syed Hamid, Hao Zhang "Thermo-mechanical large deformation responses of Hydrogenated Nitrile Butadiene Rubber (HNBR): Experimental results", International Journal of Solids and Structures, Volume 47, Issue 20, 1 October 2010, Pages 2653-2659.
- Yu, S., Liu, H., Khan, A.S., **Baig, M.**, Pandey, A. "The effects of strain rate and temperature on uniaxial compressive response of polyethylene": Macro- to nano-scale inelastic behavior of materials: Plasticity, Fatigue and Fracture, eds. Akhtar S. Khan & B. Farrokh, Neat Press, Fulton, Maryland (2009).
- **Baig, M.**, and Khan, A.S. "Strain rate dependent response of an amorphous polymer: polycarbonate": In Plasticity of Conventional and Emerging Materials, eds. Akhtar S. Khan & B. Farrokh, Neat Press, Fulton, Maryland (2007).
- **Baig, M.**, and Khan, A.S. "Strain rate dependent response of advanced high strength steels": In Plasticity of Conventional and Emerging Materials, eds. Akhtar S.Khan & B. Farrokh, Neat Press, Fulton, Maryland (2007).
- Khan, A.S., Farrokh, B., **Baig, M.**, Meredith, C., Pandey, A., "Plasticity of Conventional and Emerging Materials", Proceedings of Plasticity 2007, Neat Press, Fulton, Maryland.
- Zhang,H., **Baig, M.**, Hamid, S., Khan, A.S. "Mechanical responses of Elastomers for downhole applications in oil and gas industry": In Anisotropy, Texture, Dislocations and Multiscale Modeling in Finite Plasticity and Viscoplasticity & Metal Forming, Eds. Akhtar S. Khan and R. Kazmi, Neat Press, Fulton, Maryland (2006).
- **Baig, M.**, and Khan, A.S. "Strain-rate dependent response of TRIP800 and DP800 steels and constitutive modeling": In Anisotropy, Texture, Dislocations and Multiscale Modeling in Finite Plasticity and Viscoplasticity & Metal Forming, Eds. Akhtar S. Khan and R. Kazmi, Neat Press, Fulton, Maryland (2006).
- **Baig, M.**, and Khan, A.S. "Response under bi-axial loading and modeling of oxygen free high conductivity (OFHC) Copper": In Anisotropy, Texture, Dislocations and Multiscale Modeling in Finite Plasticity and Viscoplasticity & Metal Forming, Eds. Akhtar S. Khan and R. Kazmi, Neat Press, Fulton, Maryland (2006).

- Khan, A.S., Kazmi, R., **Baig, M.**, Farrokh, B., Pandey, A., “Anisotropy, Texture, Dislocations and Multiscale Modeling in Finite Plasticity and Viscoplasticity & Metal Forming”, **Asst. Editor**, Proceedings of Plasticity 2006, Neat Press, Fulton, Maryland.

PRESENTATIONS (Conferences)

- **Baig, M.**, Ammar, R.H., Seikh, H.A. “Effect of consolidation and sintering parameters on the mechanical responses of nanocrystalline Al-Fe alloy processed by Mechanical Alloying”. Presented at International Conference on Materials and Technology 2014 held in Chicago, USA.
- **Baig, M.**, Danaf, E.A. "Thermo-mechanical responses of an Aluminum alloy processed by Equal Channel Angular Pressing (ECAP)". Presented at Material Science 2012 held in Chicago, USA.
- Khan, A.S., **Baig, M.**, Farrokh, B., Kazmi, R. “From conventional metals to emerging materials (polymers & nanocrystalline solids): Responses over wide ranges of strain-rates & temps. and constitutive modeling”. Presented at International Symposium on Plasticity 2009 held in St. Thomas, U.S Virgin Islands, USA.
- **Baig, M.**, Khan, A.S. “Strain rate dependent response of advanced high strength steels”. Presented at International Symposium on Plasticity 2007 held in Anchorage, Alaska.
- **Baig, M.**, Khan, A.S. “Multi-axial response of OFHC Copper”. Presented at International Symposium on Plasticity 2006 held in Nova Scotia, CANADA.
- Zhang,H., **Baig, M.**, Hamid, S., Khan, A.S. “Mechanical responses of Elastomers for downhole applications in oil and gas industry”. Presented at International Symposium on Plasticity 2006 held in Nova Scotia, CANADA.
- **Baig, M.**, and Khan, A.S. “Quasistatic and Dynamic response of OFHC Copper: Experiments and Modeling”. Presented at SAMPE 2005 student conference held in University of Maryland College Park, MD.

SERVICE TO SOCIETY

- Serving as an Editor for MAYFEB Journal of Materials Science (Present).
- Active reviewer for International Journal of Plasticity (2010 – Present).
- Active reviewer for Material Science and Engineering A (2012 – Present).

HONORS/ACADEMIC ACHIEVEMENTS

- **Brainbench certified professional** in “MS Excel 2003 Fundamentals” with Scoring higher than 92% of all previous test takers. **Transcript ID#: 2530364**
- A **Third** place in the Mechanical Engineering Graduate Student Poster Competition held at UMBC.
- A **Second** place for paper presentation “Quasistatic and Dynamic response of OFHC Copper: Experiments and Modeling”, at SAMPE 2005 Student Symposium held at University of Maryland College Park, Maryland.