



Causey Engineering
LLC

Gerald J. Hietpas, PE
President

Causey Engineering LLC

"Forensic and Investigative Services"

PO Box 341057-0018

Austin, TX 78734

www.CauseyEngineering.com

Phone & Fax (512) 261-3930

jhietpas@austin.rr.com

Curriculum Vitae

MEHRNOUSH ZARE, MSME, EIT



Ms. Zare is an Associate of Causey Engineering, LLC. Causey Engineering has for over 25 years been providing forensic and investigative engineering services and litigation support, specializing in industrial and construction engineering, operations, safety, patents, and regulations. Ms. Zare has particular experience in the field of oil and gas drilling.

Education:

Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran

B.S., Materials Engineering – 09/2004

Sahand University of Technology, Tabriz, Iran

M.S., Materials Engineering – 04/2007

University of California Riverside, CA

M.S., Mechanical Engineering – 08/2010

Academic Honors:

Dean's Distinguished Fellowship Award - University of California, Riverside, CA
fall 2008 – fall 2010

99 percentile - National Graduate Program Entrance Exam, Iran 2004

Skills:

Materials Characterization: Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), X-Ray Diffraction (XRD), Energy Dispersive Spectroscopy (EDS)

Engineering Tools and Programming: SOLIDWORKS, ANSYS, NI Lab View, MATLAB

Oilfield Drilling and Measurements: Schlumberger MWD and LWD Tools, Offshore Deep Drilling

Engineer in Training (EIT): California Board for Professional Engineers EIT Certification
Number 136196

Work Experience:

Causey Engineering LLC, Austin, TX

May 2009 - Present

- *Forensic Expert:* Ms. Zare's specialties are off-shore deep directional platform drilling and engineering materials. Causey Engineering provides engineering analysis, governmental regulation investigation and research, accident reconstruction and litigation support primarily related to oil and gas, refineries, chemical and petrochem plants, central power stations, electronic manufacturing, food processing, pulp and paper, lumber manufacturing, industrial construction, and warehousing.

CE-CERT, Center for Environmental Research and Technology, *Riverside, CA* *March 2009*
– *Present*

- Work as a researcher in SC-RISE (Southern California Research Initiative for Solar Energy)
- Assisted in the establishment of solar thermal laboratory
- Studied on molten salt characterization for solar power plants and provided reports and presentations
- Collaborated with other research members and parties to develop the project

Schlumberger, Oilfield Services

June 2007 - July 2008

- Worked as a drilling and measurements field engineer on offshore oil rigs
- Served as a team member on the oil rigs to prepare the necessary tools and sensors
- Utilized the tools to obtain the oil well measurements while drilling and troubleshooting rig problems
- Worked directly with Drillers and Directional Drillers to maintain the well trajectory
- Worked with Schlumberger Drilling Mud Motors and PowerDrive Rotary Steerables
- Programmed and utilized Schlumberger MWD and LWD tools and assisted the rig floor crew to make up the Bottom Hole Assembly
- Prepared presentations in safety and educational meetings
- Ranked 2nd in the class of 24 for the 10 week course of Drilling and Measurements in Schlumberger Training Center
- Obtained the offshore safety, helicopter, and firefighting certifications, grade 9 FE

Advance Materials Research Center, *Tehran, Iran*

June 2005 - September 2006

- Researched on medical implants, NiTi shape memory and stainless steel
- Studied on corrosion and biocompatibility of the implants, cell culture and student t-test statistical studies
- Published papers, presented in conferences and prepared reports

Iran Machine and Pipe Manufacturing Co. (L.M.I), *Tehran, Iran*
August 2002

June 2002 -

- Served as an intern in the field of ductile and gray cast irons and centrifugal casting of pipes
- Co-operated with the specialists to analyze the casting products and inspected the casting defects

Research Experience:

Molten Salt Characterization, Ce-cert, Riverside, CA *March 2009 – September 2010*

- Studied inorganic molten salts for thermal energy storage in solar power plants
- Researched on salt slurry rheological properties, solidification and nucleation
- Analyzed the binary phase diagrams and published and presented the results

Nickel-Titanium Shape Memory Alloys, ADR center, Tehran, IRAN

June 2005 - September 2006

- Studied on manufacturing, properties, corrosion and biocompatibility of NiTi shape memory alloys

Metallurgical Characterization, Amirkabir University, Tehran, IRAN

June 2002 – September 2004

- Studied on the cold roll bonding and mechanical properties of Cu-Ag bimetallic strips
- Investigated on casting defects inspection using expert systems
- Researched on casting, microstructure and mechanical properties of ductile cast irons

Composite Materials, Amirkabir University, Tehran, IRAN

June 2001 - June 2002

- Studied on mechanical properties and stress analysis of fiber reinforced composite material
- Stimulated the stress analysis using NISA and ANSYS programs
- Assisted a graduate student to obtain and compare the mechanical properties of the graphite reinforced lamellar composites with epoxy matrices,

Professional Memberships:

AcerS - American Ceramics Society

AIST - Material Advantage including: Association for Iron and Steel Technology

ASM International – The Materials Information Society

ASME - American Society of Mechanical Engineers

Schlumberger Alumni Association

SWE - Society of Women Engineers

TMS - The Minerals, Metals and Materials Society

Selected Publications and Presentations:

["Biocompatibility and corrosion behavior of the shape memory NiTi alloy in the physiological environments simulated with body fluids for medical applications"](#), by J. Khalil-Allafi, B. Amin-Ahmadi, M. Zare. *Materials Science and Engineering C 30 (2010) 1112-1117.*

"Thermal Heat Storage in Inorganic Molten Salt Slurries for Solar Central Electricity", by M. Zare and R. Abbaschian, *Material Challenges in Alternative and Renewable Energy*, February 2010, Cocoa Beach, FL, USA.

"A Comparison between the Electrochemical Corrosion Behavior of Ni-Ti Shape Memory Alloy and 316LVM Stainless Steel in a Body Stimulated solution" by M. Zare, F. Anoooshehpour, J. Khalil-Allafi, and M. Mahdi-Hadavi. 10th Annual Steel and Iron Symposium, October 2006, Tehran, Iran.

"Corrosion Behavior and Cytocompatibility of a Ni-Ti Shape Memory Alloy", by M. Zare, J. Khalil-Allafi, O. Bayat, and M. Mahdi-Hadavi. ESOMAT, September 2006, Bochum, Germany.

"The Effect of Diffusion Annealing Temperature on the Microstructure and Interface Bonding Strength of Two-Layer Ag-Cu Strips", by M. Zare, M. Ketabchi, N. Parvin, A. Haghiri. 5th Conference of Metal Forming, April 2006, Tehran, Iran.

"A Review on the Surface Properties and Surface Modification of Ni-Ti Shape Memory Alloy for Medical Applications", by M. Zare and J. Khalil-Allafi. 7th National Conference of Heat Treatment and Surface Engineering, April 2006, Isfahan, Iran.

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