

John J. Valenza II

Profile

Materials scientist with 13 years of research experience, who is adept at theoretical modeling, as well as laboratory experiments. Broad background promotes rapid assimilation to the demands of any research project. Extensive experience in the following areas:

- ◆ Mechanics, all areas (solid, fluid, poro-, fracture, damage), including mechanical testing
- ◆ Thermodynamic and kinetic processes in materials (diffusion, heat flow, chemical reaction, solidification, drying)
- ◆ Interfacial phenomena (confined fluids, thin films, polymer adsorption, colloidal systems)
- ◆ Processing/microstructure/property relations, heterogeneous media, ceramic materials, porous media, granular media

Skills

- ◆ Excellent written and oral communication skills. Experience working in, or leading groups. Teaching experience.
- ◆ Extremely proficient with common computer applications (e.g. MS Office), or writing software (Object Oriented, web-based)
- ◆ Thermal analysis, microstructural analysis (physical, microscopy, or electron microscopy), XRD, particle size analysis
- ◆ Sol/gel synthesis, colloidal suspensions, novel permeability meas., optical profilometry, atomic force microscopy
- ◆ Design/build/control novel experiments, laboratory/safety management, research management/mentoring.

Education

Princeton University, Princeton, NJ - Ph. D. Materials Science, May 2005

Virginia Tech, Blacksburg, VA - B. S. Civil Engineering, December 1999

Experience

Schlumberger-Doll Research , Cambridge, MA <u>Research Scientist</u>	11/08 - Present
<ul style="list-style-type: none">• Relate structure of gas shale to composition and natural processing; relate to properties like permeability• Characterize crystallization pressure that arises from the precipitation of salt in reservoir rock• Characterize role of liquid viscosity in defining dissipative capacity of weakly wet granular media	
<u>Post-Doctoral Research Associate</u>	11/06 - 11/08
<ul style="list-style-type: none">• Investigate feasibility of using humid granular media to attenuate structure-borne sound• Characterize the dissipative properties of a humid granular medium• Characterize the effect of a liquid bridge on contact mechanics in granular media	
Princeton University , Princeton, NJ Princeton Institute Science & Technology Materials; <u>Post-Doctoral Research Associate</u>	04/05 - 09/06
<ul style="list-style-type: none">• Adsorb polymers on silicate and carbonate surfaces to reduce potential for disjoining forces• Measure crystallization pressure (CP) with 2 novel experimental techniques	
Civil and Environmental Engineering, <u>Undergraduate and Graduate Student Mentor</u>	01/02 - 06/05
<ul style="list-style-type: none">• Design, oversee, and participate in student research projects• Organize results, and present findings to primary investigator	
Princeton Institute Science & Technology Materials/Dept of Civil Engineering; <u>Graduate Student</u>	11/00 - 04/05
<ul style="list-style-type: none">• Substantiated 2 novel permeability measurements, validated analysis of experiments• Showed that water exhibits anomalous thermal expansion when confined in nanometric pores• Identified mechanism responsible for salt scaling	
Civil & Environmental Engineering; <u>Senior Thesis Colloquium</u>	11/02 - 06/04
<ul style="list-style-type: none">• Advised senior class on effective research, writing, and presentation techniques• Acted as liaison between senior class and department administration	
W. R. Grace , Cambridge, MA <u>Research Associate</u>	02/00 - 08/00
<ul style="list-style-type: none">• Developed surfactant based concrete admixture• Identified surfactant capable of transporting particles to voids entrained during vigorous mixing	
Princeton University , Princeton, NJ <u>Research Assistant</u> , Prof. George W. Scherer	05/98,99 - 08/98,99
<ul style="list-style-type: none">• Stabilized metal oxide particle dispersion in silica gel solution (1999)• Investigated ability to prevent drying shrinkage, and manipulate silica gel properties with metal oxide particles (1999)• Monitored effectiveness of nucleating agent in the presence of various surfactants (1998)• Identified mechanical processing that improves the effectiveness of organic nucleating agent (1998)	

Publications & Awards

16 peer-reviewed publications, and 1 US Patent.

(2007) - American Ceramic Society - Brunauer Award (Best Paper Cements Division)