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## BIOGRAPHICAL SKETCH

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### DAVID KISAILUS

Department of Chemical & Environmental Engineering, Materials Science and Engineering Program,  
University of California, Riverside

Phone: (951) 827-4310; Fax: (951) 827-5696; [david@engr.ucr.edu](mailto:david@engr.ucr.edu); <http://www.engr.ucr.edu/~david/>

#### Education

University of California, Santa Barbara	Materials Science & Engineering	Ph.D., 2002
University of Florida	Materials Science & Engineering	M.S., 1999
Drexel University	Chemical Engineering	B.S., 1993

#### Research and Professional Experience

2015 – Present	Professor, Chemical & Environmental Engineering, UC Riverside
2015 – Present	Member of UNESCO Chair in Materials and Technologies for Energy Conversion, Saving and Storage (MATECSS)
2014 – Present	Director and Lead PI, Multi-University Research Initiative (MURI) Team
2013 – Present	Associate Professor, Chemical and Environmental Engineering and Materials Science and Engineering Program, UC Riverside
2011 – Present	Winston Chung Endowed Chair of Energy Innovation, UC Riverside
2008 – Present	Undergraduate Chair, Materials Science and Engineering, UC Riverside
2007 – 2013	Assistant Professor, Chemical and Environmental Engineering and Materials Science and Engineering Program, UC Riverside
2005 – 2007	Research Scientist, HRL Laboratories, LLC, Malibu, CA
2002 – 2005	Post-Doctoral Research Associate in the California NanoSystems Institute, University of California, Santa Barbara (UCSB)

#### Five Most Relevant Publications

- Stress and Damage Mitigation from Oriented Nanostructures within the Radular Teeth of *Cryptochiton stelleri*, L.K. Grunenfelder, E. Escobar de Obaldia, Q. Wang, D. Li, B. Weden, C. Salinas, R. Wuhler, P. Zavattieri and **D. Kisailus**, *Adv. Funct. Mater.*, **24** (39) (2014) 6093-6104
- Phase transformations and structural developments in the radular teeth of *Cryptochiton stelleri*, Q. Wang, M. Nemoto, D. Li, J.C. Weaver, B. Weden, J. Stegemeier, K.N. Bozhilov, L.R. Wood, G.W. Milliron, C.S. Kim, E. DiMasi, **D. Kisailus**, *Adv. Funct. Mater.*, **23** (2013) 2908–2917.
- The Stomatopod Dactyl Club: A Formidable Damage-Tolerant Biological Hammer, J. Weaver, G. Milliron, A. Miserez, K. Evans-Lutterodt, S. Herrera, I. Gallana, W. Mershon, B. Swanson, P. Zavattieri, E. DiMasi, **D. Kisailus**, *Science*, **336** (2012) 1275-1280.
- A proteomic analysis from the mineralized radular teeth of the giant Pacific chiton, *Cryptochiton stelleri* (Mollusca), M. Nemoto, Q. Wang, D. Li, S. Pan, T. Matsunaga, **D. Kisailus**, *Proteomics*, **12** (18) (2012) 2890-2894.
- Analysis of an ultra hard magnetic biomineral in chiton radular teeth, J. Weaver, Q. Wang, A. Miserez, A. Tantuccio, R. Stromberg, K.N. Bozhilov, P. Maxwell, R. Nay, S.T. Heier, E. DiMasi, **D. Kisailus**, *Materials Today*, **13** (2010) 42-52.

#### Five Other Publications

- A Sinusoidally-Architected Helicoidal Biocomposite, N.A. Yaraghi, N. Guarín-Zapata, L.K. Grunenfelder, E. Hintsala, S. Bhowmick, J.M. Hiller, M. Betts, E.L. Principe, J.Y. Jung, L. Sheppard, R. Wuhler, J. McKittrick, P.D. Zavattieri and **D. Kisailus**, *Advanced Materials*, **28** (32), (2016) 6835–6844.
- Analysis of the mechanical response of biomimetic materials with highly oriented microstructures through 3D printing, mechanical testing and modeling, E. Escobar de Obaldia, C. Jeong, L.

Grunenfelder, **D. Kisailus** and P. Zavattieri, *Journal of the Mechanical Behavior of Biomedical Materials*, 48 (2015) 70-85.

- Bio-Inspired Impact Resistant Composites, L.K. Grunenfelder, N. Suksangpanya, C. Salinas, G. Milliron, N. Yaraghi, S. Herrera, K. Evans-Lutterodt, S.R. Nutt, P. Zavattieri, **D. Kisailus**, *Acta Biomaterialia*, **10** (9) (2014) 3997-4008.
- Fracture mitigation strategies in gastropod shells, C. Salinas and **D. Kisailus**, *Journal of Materials*, **65** (4) (2013) 473-480.
- Microstructural and Biochemical Characterization of the Nanoporous Sucker Rings from *Dosidicus gigas*, A. Miserez, J.C. Weaver, P.B. Pederson, T. Schneeberk, R.T. Hanlon, **D. Kisailus**<sup>#</sup>, H. Birkedal<sup>#</sup>, *Adv. Mat.*, **21** (4), (2009) 1-6.

### **Honors and Awards**

- Kavli Fellow, National Academy of Sciences – 2014 - Present
- Winston Chung Endowed Chair of Energy Innovation, 2011 - Present
- More than 50 invited and keynote talks: Gordon Research Conferences (Thin Films and Crystal Growth, July 2011, Structural Nanomaterials, August 2016; Biomineralization, August 2016), ACS, MRS, TMS, SPIE, ASME, etc.
- Chancellor's Award: Excellence in Undergraduate Research & Creative Achievement, 2012, 2017

### **Synergistic Activities**

- Active reviewer for multiple journals (e.g., *Science*, *Nature*, *Advanced Materials*, *Advanced Functional Materials*, *Crystal Growth and Design*, *J. Materials Chemistry*, *J. Am. Chem. Soc.*, etc.),
- ARO, AFOSR, NSF and DOE proposal reviewer and panelist. NSF CAREER panelist.
- Symposium Organizer: Materials Research Society, Spring 2016; Spring 2009; Arizona; 24th Conference on Crystal Growth & Epitaxy, Fallen Leaf Lake, CA, 2014; International Scientific Committee Member and Symposium Organizer (Co-chair), International Conference on Composite Materials, Copenhagen, Denmark (2015), Xi'an, China (2017); Advanced Ceramic Materials and Processing for Photonics and Energy, International Conference and Exposition on Advanced Ceramics and Composites, Winter 2016, 2017, Daytona Beach, FL, USA
- American Institute for Chemical Engineers (AIChE) & Materials Research Society Faculty Advisor
- Initiated collaborative outreach program with the Riverside Metropolitan Museum and Mira Loma Middle School for K-12 educational programs as well as public forums on science and technology.
- Mentored more than 120 undergraduate students since 2007 (14 current participants)

### **Collaborators**

Atsushi Arakaki (Tokyo University of Agriculture and Technology), Dimitri Deheyn (UC San Diego), James DeYoreo (Pacific Northwest National Labs), Elaine DiMasi (Brookhaven National Lab), Horacio Espinosa (Northwestern University), Cheryl Hayashi (UC Riverside), Nigel Hughes (UC Riverside), Hiroaki Imai (Keio University), Takashi Kato (Tokyo University), Yoshiaki Maeda (Tokyo University of Agriculture and Technology), Joanna McKittrick (UC San Diego), Marc Meyers (UC San Diego), Michiko Nemoto (Okayama University), Andreas Ruediger (INRS, Institut National de la Recherche Scientifique, Université du Québec), Leigh Sheppard (University of Western Sydney), Tsuyoshi Tanaka (Tokyo University of Agriculture and Technology), Jinhui Tao (Pacific Northwest National Lab), Dan Wang (Chinese Academy of Sciences), Pablo Zavattieri (Purdue).

### **Graduate and Postdoctoral Advisors**

Fred Lange (deceased) Ph.D. advisor (University of California, Santa Barbara); Daniel Morse Post-doctoral advisor (University of California, Santa Barbara).