



**Exponent**<sup>®</sup>  
Engineering & Scientific Consulting

## Ross Bennett-Kennett, Ph.D.

Senior Associate | Materials & Corrosion Engineering  
3350 Peachtree Road NE, Suite 1125 | Atlanta, GA 30326  
(678) 412-4810 tel | rbennettkennett@exponent.com

### Professional Profile

Dr. Bennett-Kennett specializes in materials characterization and failure analysis of a variety of thin film systems, including applications in consumer cosmetics, photovoltaics, wearable electronics, and medicine. He has expertise in investigation the role of external factors on the underlying function of a variety of materials, including the effects of cosmetic treatments on human skin, myocardial infarction on heart tissue, and the thermomechanical reliability of perovskite solar cells. Dr. Bennett-Kennett has extensive experience in other forms of mechanical characterization, including nanoindentation, substrate curvature, Finite Element Analysis (FEA), and Digital Image Correlation (DIC), as well as high resolution microscopy and spectroscopy of biological and engineering materials, including Atomic Force Microscopy (AFM), Confocal Raman, Fourier-Transform Infrared (FTIR), and UV-Vis.

Prior to joining Exponent, Dr. Bennett-Kennett completed his Ph.D. at Stanford University in the department of Materials Science and Engineering, where his research focused on relating stresses in human skin upon drying to perceived impacts of a variety of consumer cosmetic treatments. To facilitate this research, Dr. Bennett-Kennett designed and fabricated a thin film stress measurement system for real time tracking of biaxial stresses in films exposed to a harsh external environment. Dr. Bennett-Kennett leveraged these new systems and his multidisciplinary expertise to study mechanical stresses of energy materials in situ and to create new collaborative partnerships with Stanford Medicine, respectively.

### Academic Credentials & Professional Honors

Ph.D., Materials Science and Engineering, Stanford University, 2020

M.S., Materials Science and Engineering, University of California, Santa Barbara, 2015

B.S., Physics, Arizona State University, 2013

National Science Foundation Graduate Research Fellowship Program Fellow, 2013-2016

### Patents

N. Herbots, et. al. Methods for Wafer Bonding and for Nucleating Bonding Nanophases Using Wet and Steam Pressurization, US Patent filed October 31, 2011

N. Herbots, et. al. Molecular Film Containing Polymeric Mixture for Hydrophobic Implant Surfaces US Patent filed October 31, 2011

## Publications

R. Bennett-Kennett, et. al. Comment on “Light-induced lattice expansion leads to high-efficiency perovskite solar cells.” Science 10.1126/science.aay8691 (2020)

H. Wang, R. Bennett-Kennett, et. al. Natural Heart Regeneration Preserves Native Ventricular Biomechanical Properties after Myocardial Infarction in Neonatal Mice. Sci Rep 10, 7319 (2020)

R. Bennett-Kennett, et al. Decoding skin comfort: The role of biomechanics and mechano-transduction underlying consumer perception – In preparation

C. Mias, et. al. (In press) Protective properties of Avène Thermal Spring water on biomechanical, ultrastructural and clinical parameters of human skin Journal of the European Academy of Dermatology and Venereology

A. L. Titan, et. al. Microstructural and Biomechanics Analysis of the Mouse Deep Digit Flexor Tendon - Submitted to the Journal of Orthopedic Research