



CALIPER & CRAYON

Stephen James Kranz

2023 **Process engineering contractor**
GaeaStar

- Built out a lab and created safety protocols for a ceramic manufacturing process.
- Prototyped and documented a glaze application technique.

Previous work

2017 - 2020 **Lab manager, Scientist**
Origin Laboratories

- Managed an R&D 3D-printing laboratory (40 printers, 1,000 ft²)
- Led a team of (2-3) scientists and technicians to accomplish the lab's goals:
 - Operate prototype printers, and evaluate hard- and software improvements.
 - Develop procedures to facilitate the printers' use for industrial mass manufacture.
 - Evaluate and optimize the performance of third-party printing resins.
 - Produce sample parts for potential and ongoing customers.

2016 **Visual story teller, Researcher**
Autodesk

- Created informational videos and tutorials about the Ember 3D printer.
- Researched improvements for print speed and print quality.

2013 - 2015 **Educational video producer**
EngineerGuy YouTube video channel

- Produced engineering-themed videos with Prof. Bill "EngineerGuy" Hammack.
- Edited and illustrated over a dozen videos with tens of millions of views combined.

Education

2010 - 2013 **Materials science and engineering, M.S.**
University of Illinois, Urbana-Champaign

- Thesis research studied laminar flow of non-Newtonian fluids in microfluidic printheads for the production industrial silicon wafer polishing pads.

2006 - 2010 **Materials science and engineering, B.S.**
Arizona State University

- Assisted graduate researcher by processing micro-CT images of Pb-free solder joints.

Publications

- 2020 **Enabling advanced material formulation with programmable photopolymerization**
RadTech Ultraviolet and Electron Beam Technology Conference
- 2019 **Archie: Gold in the Fire**
Archie I. Floyd, Jr., S.J. Kranz
self-published
- 2014 **Albert Michelson's Harmonic Analyzer**
B. Hammack, S.J. Kranz, B. Carpenter
Articulate Noise Books
- 2013 **High-throughput printing via microvascular multinozzle arrays**
C.J. Hansen, R. Saksena, D.B. Kolesky, J.J. Vericella, S.J. Kranz, G.P. Muldowney,
K.T. Christensen, J.A. Lewis
Advanced Materials, 25, 96-102
- 2011 **Planar and three-dimensional printing of conductive inks**
B.Y. Ahn, S.B. Walker, S. Slimmer, A. Russo, S.J. Kranz, E. Duoss, T. Malkowski, J.A. Lewis
Journal of Visualized Experiments 58
- 2010 **Three-dimensional visualization of reflow porosity and modeling of deformation in Pb-free solder joints**
M.A. Dudek, L. Hunter, S.J. Kranz, J.J. Williams, S.H. Lau, N. Chawla
Materials Characterization, 61, 433-439

Patents

- 2020 **Enhanced three dimensional printing of vertical edges**
R.M. Greene, B.J. Adzima, S.J. Kranz
United States patent 10,780,641 B2
- 2013 **Multinozzle deposition system for direct write application**
J.A. Lewis, C.J. Hansen, S.J. Kranz, J.J. Vericella, W. Wum, D.B. Kolesky
World Intellectual Property Organization, 2013/006399 A2

Photographs & visuals

- 2015 *Electronics Letters*, 51, 661-662
- 2013 *Advanced Materials*, 25, 96-102
- 2013 *Energy Procedia*, 37, 219-224
- 2012 *Journal of the American Chemical Society*, 134, 1419-1421
- 2011 *Advanced Materials*, 23, 3426-3430
- 2011 *Advanced Materials*, 23, 5055-5058
- 2011 *IEEE Antennas and Wireless Propagation Letters*, 10, 1425-1428
- 2011 *Chemical and Engineering News*, "Conductive silver ink from a ballpoint pen"