



## From Lab to Launch – Transitioning Research to Real-World Solutions

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Abstract.

University-based research is pivotal in driving the global economy by fostering a risk-tolerant environment that nurtures innovation and groundbreaking discoveries. It acts as a catalyst for economic growth, transforming scientific breakthroughs into practical applications that can lead to the creation of new industries and jobs. For instance, technologies developed at Arizona State University, such as Conductive Bridging Random Access Memory (CBRAM) and Dendritic Identifiers, exemplify this transition to early commercialization. CBRAM represents a novel type of non-volatile memory, utilizing the electrochemical formation and manipulation of nanoscale conducting filaments within solid electrolyte films. Meanwhile, Dendritic Identifiers, which are naturally occurring branching patterns arising from microscale instabilities, serve as unique “fingerprints” for enhancing supply chain transparency. Despite their differences, these patented inventions share a common commercialization journey. This talk will cover the origins, scientific foundations, and market introduction pathways of these technologies as they transitioned from “lab to launch.”

Michael Kozicki joined Arizona State University in 1985 from the semiconductor industry and is currently Professor and Graduate Program Chair in the School of Electrical, Computer and Energy Engineering and Senior Global Futures Scientist at ASU. His research, which has been cited nearly 17,000 times, focuses on the development of novel materials, processes, and devices in applications ranging from information storage to digital identity. He has over 70 US and several dozen international patents granted, which have led to commercialized technologies including Conductive Bridging Random Access Memory (CBRAM), achievements which resulted in his election as a Fellow of the National Academy of Inventors in 2015. In 2021, Dr. Kozicki co-founded Denssec ID LLC, an ASU spin-out company that was formed to develop and commercialize Dendritic Identifier digital trigger technology for supply chain transparency and track-and-trace applications in markets ranging from agri-food to microelectronics.