

Andrew Oudekirk, PhD.

Distinguished Corporate Scientist and National Academy of Engineering member with over 550 issued U.S. patents and a career defined by the creation of multi-billion-dollar technology platforms. Recognized for revolutionizing the display industry through the invention and scaling of Multilayer Optical Films (MOF) at 3M and leading advanced optical architecture at Meta Reality Labs. Founder of the "Leap" innovation methodology, a proprietary framework that transforms high-uncertainty R&D into executable commercial roadmaps by aligning fundamental physics with unarticulated market needs to build defensible IP moats and sustainable revenue.



Awards and Honors:

- ✧ Election to the U.S. National Academy of Engineering (NAE), 2005, “for the development and commercialization of multilayer polymer films with unique optical properties.”
- ✧ 3M Carlton Society membership (3M’s highest technical honor, often described as its “hall of fame”).
- ✧ Fast Company “Fast 50” Award, 2000, recognizing him as one of 50 innovators whose work was transforming business and technology.
- ✧ Finance & Commerce “Innovator of the Year”, 2003, honoring leadership and innovation in his technical and commercial work.
- ✧ American Chemical Society National Award for Creative Invention, 2004, for outstanding creativity in inventing new chemical products or processes.
- ✧ R&D Magazine Innovator of the Year Award, 2013, cited by R&D Magazine and 3M for his achievements in optical science and innovation.

Patents: Inventor on over 550 issued U.S. patents, covering photonics, polymer processing, display systems, and optoelectronics. Patents and publications have over 23,500 citations, an h-index of 74, and an i10-index of 351.

Key Inventions:

- ✧ Multilayer Optical Films: Fundamental patents on co-extruding 800+ polymer layers to create interference mirrors with tunable reflectivity.
- ✧ Brightness Enhancement of Displays: The core physics allows LCDs to recycle polarized light, increasing display brightness and battery life.
- ✧ Compact VR Optics: Developed high efficiency and wide field-of-view folded optical paths (pancake lenses) for head-mounted displays.

Chris Liao, PhD.

A Partner at Taravine Inc., a new venture capital fund focusing on semiconductor and future compute deep tech investment. He is a 20+ year veteran in deep-tech creation and scaling across semiconductors, sensors, optics, and displays. His expertise is focused on identifying breakthroughs and guiding portfolio companies through two critical stages:

0 to 1 (Concept to Prototype): As an inventor of breakthrough and platform technologies with 50+ U.S. patents with Dr. Ouderkirk, Chris specializes in taking fundamental deep-tech concepts to viable production.

1 to a Million (Scaling and Commercialization): He leverages deep industrial connections forged during prior roles at Apple and Meta to help founders establish critical supply chains and achieve mass market adoption by connecting with end-application users.



Chris obtained his Ph.D. in semiconductor materials from UC Berkeley.

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