

Nanoscale Manufacturing Using Jet and Flash Imprint Lithography

S.V. Sreenivasan

Abstract:

Jet and Flash Imprint Lithography (J-FIL™) has demonstrated remarkable replication capability down to sub-10nm resolution. Translating this nano-scale resolution to a commercially viable manufacturing approach requires addressing key challenges in tools, materials, templates (masks) and processes that can achieve reliable nano-scale performance at reasonable cost. The speaker will provide an overall status of J-FIL technology and its adaptation to steppers, whole wafer printing tools, and roll-to-roll nanopatterning systems. This talk will include a discussion of materials, processes and template infrastructure, and will also present roadmaps to J-FIL based manufacturing solutions in various applications. In particular, the speaker will discuss the status of J-FIL steppers for CMOS memory, double sided whole substrate printing tools for bit patterned media, and roll-to-roll nanoimprinting systems for display applications.

Bio:

S.V. Sreenivasan is a Professor of Mechanical Engineering at the University of Texas at Austin. He is also a co-founder and CTO of Molecular Imprints. He holds a Ph.D. in mechanical engineering from The Ohio State University. His research is in the area of high throughput nanomanufacturing as applied to high density memory, displays and biomedicine. S.V. has published over 100 technical articles and holds over 75 U.S. patents. He has received several awards for his work including Technology Pioneer Award by the World Economic Forum, the ASME Leonardo da Vinci Award for Innovation in Machine Design, and the ASME William T. Ennor Manufacturing Technology Award.