



# Surface patterning and additive manufacturing through printing process



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## 个人简介:

Dr. Hong Zhao is currently an assistant professor in the Department of Mechanical and Nuclear Engineering at Virginia Commonwealth University (VCU). She received her Ph.D. in Mechanical and Aerospace Engineering from Rutgers University. Before joining VCU in 2014, she has worked for about 8 years at Xerox Research Center Webster. Zhao's research areas are highly interdisciplinary, focusing on micro-/nano- engineered surfaces and interfaces, thermal and fluid science, transport and self-assembly of colloidal nanoparticles, combined with scalable micro/nano manufacturing. Dr. Zhao has authored and co-authored 28 journal and proceeding publications, 33 issued patents and patent applications, 1 book and 1 book chapter.

## 报告摘要:

Printing, as a scalable manufacturing platform, has attracted growing attention in many areas, e.g. printed electronics, energy storage, bioprinting, and additive manufacturing. The challenges lie in the material compatibility during printing process, assembly of the functional materials to form patterns, and high resolution of critical features. In this talk, I will introduce various printing techniques used in our lab for functional surfaces and devices, e.g. electrospraying (electrohydrodynamic) printing, inkjet printing and extrusion based printing techniques. The fundamental interactions during inkjet printing processes will be discussed including droplet spreading and wetting, evaporation, and coalescence. I will also exemplify collaborative on-going projects on 3D printing a shoe sole with embedded pressure sensors and inkjet printing 2D nanosheet-based TFTs.