Pulsed laser dewetting of patterned thin metal films: A means of directed assembly

Attacking one of the challenges of nanoscience and technology: understanding and controlling bottom up directed assembly of materials.

- Pulsed laser treatment of nickel produces a short (ns) liquid lifetime which provides a unique way to monitor the time dependence of the dewetting process and the subsequent pattern formation.

- The assembly process via dewetting and pattern formation has been studied in detail for continuous materials.

- This work revealed that edges of patterned (non-continuous) thin films can give rise to programmable instabilities which can be useful for the directed assembly of materials.