CURRENT RESEARCH AND SCHOLARLY INTERESTS
Currently, I am working on an on-chip platform to simultaneously trap and manipulate micron scale beads and droplets with an intention to implement chemical reactions on a chip at ultrasmall volumes.

Publications

On the substrate contribution to the back action trapping of plasmonic nanoparticles on resonant near-field traps in plasmonic films OPTICS EXPRESS
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2017; 25 (21): 26198–214

Dielectrophoresis-assisted plasmonic trapping of dielectric nanoparticles PHYSICAL REVIEW A
Zaman, M. A., Padhy, P., Hansen, P. C., Hesselink, L.
2017; 95 (2)

Adjoint method for estimating Jiles-Atherton hysteresis model parameters JOURNAL OF APPLIED PHYSICS
2016; 120 (9)

Metal wire waveguide based all plasmonic refractive index sensor for terahertz frequencies SENSORS AND ACTUATORS B-CHEMICAL
Padhy, P., Sahu, P. K., Jha, R.
2016; 225: 115-120