Research & Scholarship

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

PUBLICATIONS

• On the substrate contribution to the back action trapping of plasmonic nanoparticles on resonant near-field traps in plasmonic films *OPTICS EXPRESS*
  Padhy, P., Zaman, M., Hansen, P., Hesselink, L.
  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