

Abstract Submitted
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Plasmonic Drag Effect: Toward Coupling of Electronic and Plasmonic Components in Nano-Circuits MATTHEW LEPAIN, DAVID KEENE, Georgia Southern Univ, VINCENT RONO, NATALIA NOGINOVA, Norfolk State Univ, MAXIM DURACH, Georgia Southern Univ — Plasmonic Drag Effect (PDE) is a phenomenon of rectification of plasmonic optical fields into dc currents or dc polarization in metal nanostructures. Although being a nonlinear effect, PDE is strongly enhanced by resonance and confinement factors and can produce usable pulsed dc voltages of up to several mV in pulsed laser experiments, promising a path to long-awaited opportunities to couple electronic and plasmonic components in nano-circuits. PDE is produced via plasmonic pressure and plasmonic striction rectification forces. In this talk we will discuss the similarities and differences between these forces and possible additional mechanisms of PDE proposed by authors. We will describe generation of DC potential profiles by plasmons in metal nanostructures from both theoretical and experimental perspectives.

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