

Abstract Submitted
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Resonant spin dipole induced by an in-plane potential gradient spin-orbit interaction¹ C. S. CHU, K. Y. CHEN, Department of Electrophysics, National Chiao Tung University, Hsinchu, Taiwan, A. G. MAL'SHUKOV², Institute of Spectroscopy, Russian Academy of Science, 142190 Troitsk, Moscow oblast, Russia — Spin-orbit interaction (SOI) arising from in-plane potential gradient is invoked for the generation of spin accumulation in a driven electric field. The SOI and a local in-plane potential pattern together bring about resonant spin dependent scatterings to electrons in a nonequilibrium distribution. In the vicinity of a ring-shaped potential barrier pattern, a spin dipole distribution with a resonant dipole strength characteristic is obtained. As the chemical potential μ is increased across one such resonant energy, the dipole strength manifests both reversal and large amplitude enhancement. The scattering resonance, thus, provides an additional knob for the manipulation of the spin accumulation.

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