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Generation of spin currents via spin-flip Raman scattering ALI NAJMAIE, E. YA. SHERMAN, J. E. SIPE, University of Toronto, Department of Physics — We theoretically show that stimulated Raman scattering can be used to inject pure spin currents in doped non-centrosymmetric semiconductors. In the case of bulk n-doped GaAs, the spin current is caused by spin-flip Raman processes on electrons with opposite momenta and spins. The components of the injected spin current depend on the propagation direction and the polarization of the fields used in the Raman process. The estimated magnitude of the spin current shows that it can be detected experimentally.

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