CURRENT-INDUCED DYNAMICS IN A FERROMAGNETIC SINGLE-ELECTRON DEVICES

M. Kowalik

Department of Physics, Adam Mickiewicz University, Umultowska 85, 61-614 Poznań, Poland

The theoretical calculations of possible dynanics for a localized magnetic moment of the central electrode in a ferromagnetic single-electron devices are presented.
The spin-transfer torque from spin current absorbed by the central electrode is obtained. That spin torque have been calculated in the sequential transport regime from the relevant master equation, where a spin accumulation processes were taken into account. Thereafter, so-called in-plane component of spin torque were regarded during the integration of Landau-Lifsitz-Gilbert equation and the time evolution of the localized magnetic moment of the central electrode is obtained. The necessary conditions for switching of the magnetic moment is discussed.