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Spin pumping by time-dependent gate without magnetic field in a nanowire LU-YAO WANG, Dept of physics, Catholic Fu-Jen university, Taiwan, CHON-SAAR CHU, Dept. of Electrophysics, National Chiao-Tung university, Taiwan — We theoretically study that spin pumping by smooth profile time dependent gate in a Rashba type nanowire without magnetic field. The time dependent gate produces both spin dependent and spin-independent potentials. The spin dependent temporary potential inducing a dynamic Rashba coupling constant combining with the static Rashba coupling constant generate asymmetry spin dependent transmission. Such spin pumping can be enhanced by spin independent temporary potential.

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