

SPIN-DEPENDENT ELECTRON TUNNELING  
THROUGH MAGNETIC BARRIERS

*D. I. Sheka, V. N. Dobrovolsky, B. V. Chernyachuk*

Taras Shevchenko Kyiv University,  
Faculty of Radiophysics  
(2, Academician Glushkov Prosp.,  
Kyiv 03127, Ukraine; E-mail: [bc@miratech.kiev.ua](mailto:bc@miratech.kiev.ua))

S u m m a r y

An exact solution to the model problem of 2D-electron tunneling through magnetic barriers is given with regard for electron's intrinsic magnetic momentum. General requirements to the topology of a magnetic structure that has spin-dependent tunneling are clarified. A structure is proposed which is able to filter electrons in the direction of their spin polarization.