

Transport through capacitively coupled embedded and T-shape quantum dots in the Kondo range

P. Florków,¹ M. Antkiewicz,¹ D. Krychowski,¹ and S. Lipiński¹

¹*Institute of Molecular Physics, Polish Academy of Sciences,
M. Smoluchowskiego 17, 60-179 Poznań, Poland*

The considered system consists of electrostatically coupled embedded (ED) and side attached dots (TD). TD is coupled to the wire via the open dot. Change of the gate voltage applied to the open dot allows tuning of the Fano interference asymmetry parameter q [1]. Using slave boson approach we discuss the interplay of interference and Kondo effect for different values of Fano parameter and different coupling of open and Kondo dots for strong intradot Coulomb interaction \mathcal{U} in the limit of weak interdot Coulomb interaction \mathcal{U}' , $\mathcal{U}' \ll \mathcal{U}$, (broken SU(2) Kondo- Kondo Fano effect) and for strong interdot Coulomb coupling $\mathcal{U} = \mathcal{U}'$ (broken SU(4) Kondo- Kondo Fano effect).

References:

[1] I. Maruyama, N. Shibata, K. Ueda, J. Phys. Soc. Jpn. 73, 3239 (2004).