Nonradiative Energy Transfer in Assemblies of Nanostructures with Mixed Dimensionality PEDRO LUDWIG HERNANDEZ-MARTINEZ¹, HILMI VOLKAN DEMIR², Department of Physics, Department of Electrical and Electronics Engineering, UNAM, Bilkent University, Ankara 06800, Turkey — We study the exciton-exciton interaction and nonradiative energy transfer in nanostructure assemblies with mixed dimensionality. We investigate possible combinations in terms of dimensionality for these nanostructures, and analyze the resulting nonradiative energy transfer rates as a function of dimensionality. Depending on the direction of the energy transfer, arrangements of such nanostructures have potential applications in both photovoltaics [1] and light generation [2].


¹UNAM - National Nanotechnology Research Center and Institute of Material Science and Nanotechnology, Bilkent University
²Physics and Applied Physics Division, School of Physical and Mathematical Sciences, Microelectronics Division, School of Electrical and Electronics Engineering, Nanyang Technological University, Singapore 639798, Singapore