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**Electron Transport in Solvated Porous Nanocarbons** ARTEM BASKIN, PETR KRAL, University of Illinois at Chicago — We study electron transport in porous nanocarbons (PNCs) in vacuum, gases, and ionic solutions. Using state of the art electronic structure methods and nonequilibrium Green's functions techniques, we explore the band structures [1] and the current-voltage characteristics of PNCs with different sizes, shapes, positioning and functionalization of pores, edges, and types of electrodes. We find that the presence of ions and molecules around PNCs can largely influence their electron transmissivity. Therefore, PNCs could be used for highly sensitive detection of ions and polar molecules passing around them. [1] A. Baskin and P. Kral, Electronic Structures of Porous Nanocarbons, Sci. Rep. 1, 36 (2011).

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