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The Influence of the Schottky Barrier at the Metal/PbS NCs Junction on the Charge Transport Properties*

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The effect of the Schottky barrier height changes on the metal/EDT-treated (1,2-ethanedithiol) PbS nanocrystals film interface is considered. Also, the influence of shunts on the J−V characteristic and the Schottky barrier height is demonstrated, as well, the effect of silver oxide layer on the charge accumulation and tunneling. It is shown that the gold electrodes provide more stable results even when the Schottky barrier is formed, while the silver electrode provides more current.

Keywords: semiconductor nanocrystals, Schottky barrier, charge carriers transport, thin films.

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