NANOSENSORS ENGINEERING: II. SUPERFICIAL FUNCTIONALIZATION OF SnO_2 NANOWIRE FOR SENSING PERFORMANCE IMPROVEMENT

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Abstract - Paper presents results of study aimed the tin dioxide nanowire gas sensing performance improvement via in situ functionalization with NiO. Developed nanostructures have demonstrated improved by order gas sensitivity toward H_2 and CO and drastic increase of selectivity to H_2 against CO. Obtained results are discussed from the point of view of NiO/SnO_2 heterojunction formation and its influence on electrical transport through nanowire and nanowire interaction with target gases.

Key words: Nanowire, tin dioxide, nickel oxide, chemoresistor, functionalization, heterojunction