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ACCEPTED MANUSCRIPT

1	Synthesis, characterization and gas sensing properties of graphene oxide-
2	multi walled carbon nanotube composite
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8	Abstract
9	Graphene oxide (GO)-multi walled carbon nanotube (MWCNT) composite was synthesized and
10	characterized by X-ray diffraction, atomic force microscopy, scanning electron microscopy,

y, micro Raman, Fourier transform infrared and ultraviolet-visible near infrared spectroscopy 11 techniques. Spectral characteristics of cladding modified fiber optic gas sensors were studied for 12 various concentrations of ammonia, ethanol and methanol at 27°C. Thickness of the gas sensing 13 layer was controlled by varying the concentration of composite in ethanol medium (0.5 and 1 14 mg/mL) for three times dipping process. The 0.5 mg/mL concentrated GO-MWCNT coated 15 sensor showed 1.20, 1.40 and 1.15 times higher sensitivity than the GO coated sensor for 16 17 ammonia, ethanol and methanol vapors respectively. Further, it exhibited 1.50, 1.80 and 1.80 times better sensitivity than 1 mg/mL concentrated GO-MWCNT coated sensor for ammonia, 18 ethanol and methanol vapors respectively. The presence of functional groups in GO increased the 19 sensitivity. This is mainly attributed to the effective electron charge transfer between the 20 21 composite materials and analytes.

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