Supporting Information

VO_2 nanorods for efficient performance in thermal fluids and sensors

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S1. Plots representing the actual ratio K_{nf}/K_{EG} (K_{nf} is the thermal conductivity of the nanofluid and K_{EG} being thermal conductivity of the base fluid) across the entire experimental temperature range of 20 to 80 °C

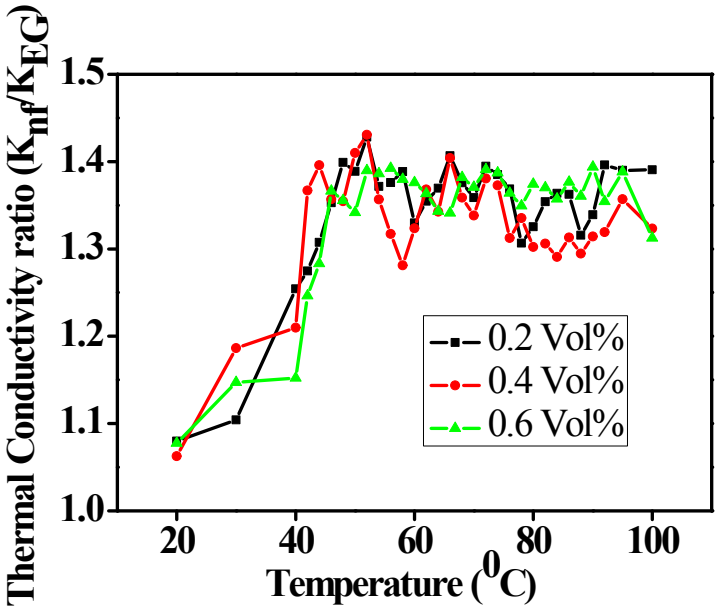

Fig. S1. Thermal conductivity ratios for the VO_2 (B)/EG nanofluids for different volume percent of VO_2. K_{nf} = thermal conductivity of the nanofluid, K_{EG} = thermal conductivity of ethylene glycol.

S2. Table representing comparison of VO_2 sensor performance towards different gases

Sl. No.	Sensing material	Target gas	Operating temperature	% sensor response	Response time	Recovery time	Reference number
1	VO_2	ethanol	300 °C	8%	---	---	[1]
2	VO_2	hydrogen	room temperature	19%	890 s	870 s	[2]
3	VO_2	carbon di-oxide	170 °C	10 %	--	--	[2]
4	**VO_2**	**LPG**	**room temperature**	**21 %**	**100 s**	**100 s**	**Present case**
5	VO_2	Humidity	room temperature	0.27 MΩ/%RH (in 10-40 %RH), 0.07 MΩ/%RH (in 40-90 %RH)	---	---	Present case

Table 1 Comparison of VO_2 sensor response towards different gas.

[1]. G. Micocci, A. Serra, A. Tepore, S. Capone, R. Rella and P. Siciliano, *J. Vac. Sci. Technol. A,* 1997, **15**, 34.

[2]. A. Simo, B. Mwakikunga, B. T. Sone, B. Julies, R.Madjoe and M. Maaza, *Int. J. Hydrogen Energ.,* 2014, **39**, 8147.