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Supplementary

Nanostructured CeO_2 ultrathin film deposited by Langmuir Blodgett technique for Highly Sensitive and Specific Detection of sub ppm level NO_2 gas at room temperature

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Table S1: Comparison with response and recovery time between our sensor and other CeO_2 sensors reported

Sample	Operating temperature	Response with NO_2	Response time	Recovery time	Ref
Columnar CeO_2 nanostructures	200° C	$\Delta R/R$ = 38 for 1 ppm	not reported	not reported	[7]
Spin coated cerium oxide films	200° C	6% at 5 ppm	5 sec	35 sec	[8]
Nanocubic CeO_2 with {100} Polar Facets on Graphene	Room temperature	16.59 % for 5 ppm	189 sec	1137 sec	[12]
RGO-CeO_2 hybrids	Room temperature	$\Delta I/I$ = 4.5 for 10 ppm	600 sec	258 sec with UV light	[13]
CeO_2 by LB technique	Room temperature	200% for 1 ppm	60 sec	600 sec	Our work

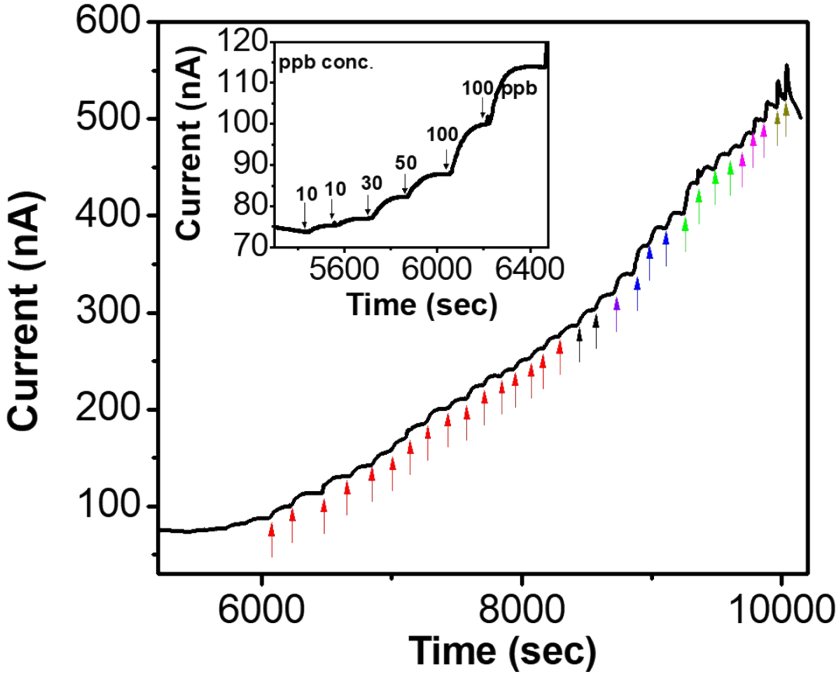

Fig. S1. Response of CeO_2 sensor with various concentration of NO_2 gas with stepwise injection represented by colored arrow: Red = 100 ppb, black = 200 ppb, blue = 400 ppb, green = 500 ppb, purple = 1 ppm, gray = 2ppm.

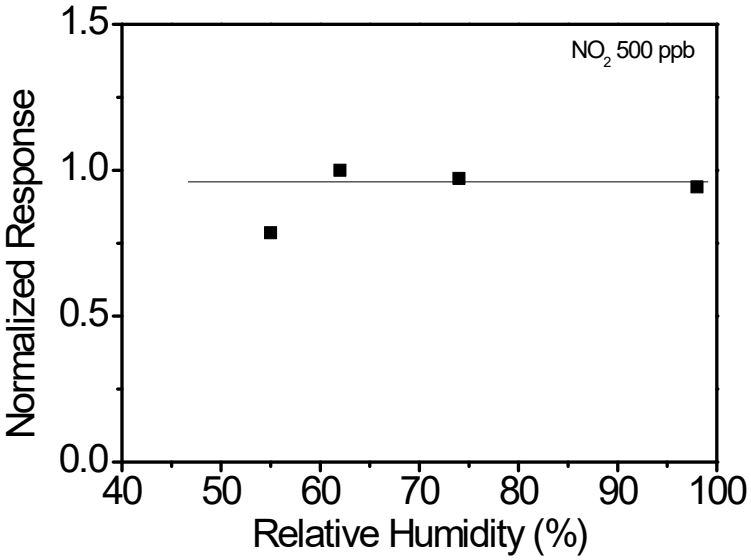

Fig. S2. Normalized response with various humidity condition

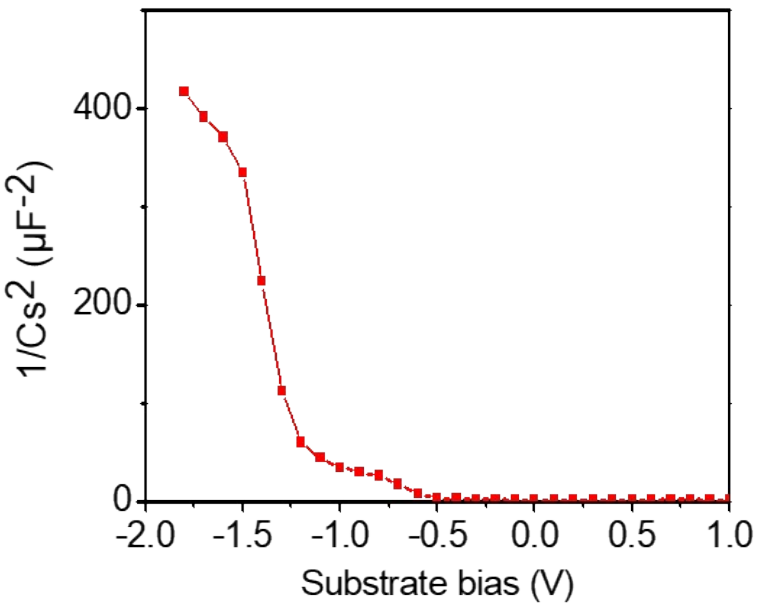

Fig. S3. Mott-Schottky plot of ultrathin CeO_2 on Si using 0.1 M KCl electrolyte at frequency of 1 kHz