Supporting Information

Dual-Site Synergistic Modulation of $La_{0.9}Fe_{0.8}Co_{0.2}O_3$ Perovskite Oxide for High-Performance Methane Sensing in Oil and Gas Pipelines

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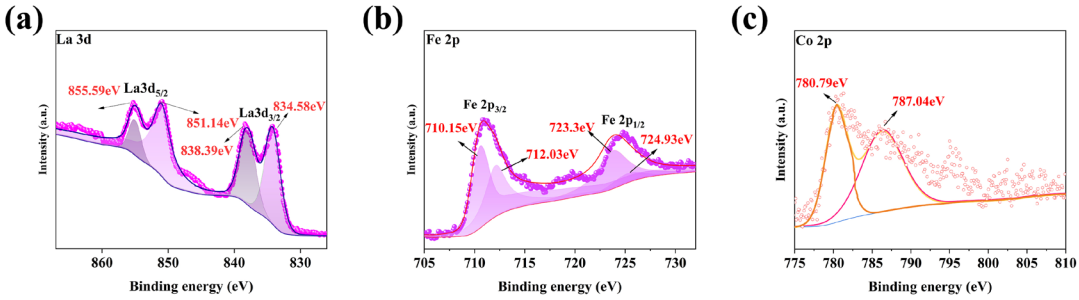


Figure S1. (a) La 3d; (b) Fe 2p; (c) Co 2p comparisons of $La_{0.9}Fe_{0.8}Co_{0.2}O_3$.

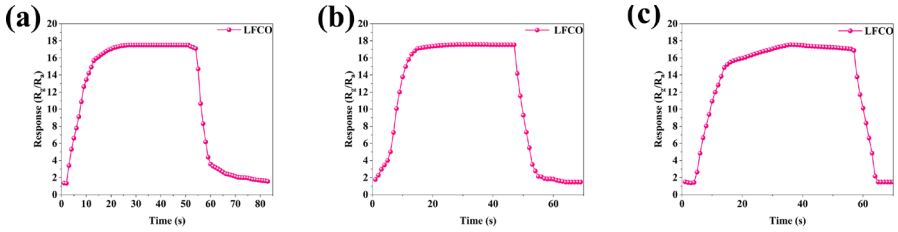


Figure S2. Reproducibility of the LFCO sensor.

Table S1. Comparison of CH_4-sensing performance of gas sensors.

Materials	Temperature (°C)	Concentration (ppm)	Response/ Sensitivity	Response time (s)	Recovery time (s)	Ref
Pd@Ni/ZnO	60	5000	904.04	4	174	[1]
1.5 at.% Ag/ ZnO	200	5000	20.15	118	119	[2]
0.5 wt% Cr-SnO_2	350	250	79.7	3.9	-	[3]
Ag/CeO_2-CuO Nanorods	175	10000	3	23	27	[4]
ZnO-xCo_3O_4	300	400	＜5	-	-	[5]
TiO1.5/ZnO nanocomposites	300	1000	1.201	430	228	[6]
$La_{0.9}Fe_{0.8}Co_{0.2}O_3$	125	100	17.55	9.9	7.2	This work

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