

SUPPORTING INFORMATION

β -Ga₂O₃: Ultralow loss and low permittivity dielectric ceramics for high-frequency packaging substrate

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Table S1. Refined structural parameters and Wyckoff positions of the Ga₂O₃ ceramic.

Refined Structural parameters	Lattice parameters					Reliability factors		
	<i>a</i> (Å)	<i>b</i> (Å)	<i>c</i> (Å)	β (°)	<i>V_m</i> (Å ³)	<i>R_{wp}</i> (%)	<i>R_p</i> (%)	χ^2
	12.2279(6)	3.0399(1)	5.8071(1)	103.848(1)	209.58(2)	5.263	3.537	3.43
Wyckoff positions	Atom	<i>x</i>	<i>y</i>	<i>z</i>	Site	<i>U_{iso}</i>		
	Ga1	0.0903(5)	0	0.7946(1)	4 <i>i</i>	0.003		
	Ga2	0.1584(8)	0.5	0.3138(2)	4 <i>i</i>	0.003		
	O1	0.1651(8)	0	0.1091(1)	4 <i>i</i>	0.011		
	O2	0.1727(2)	0	0.5654(4)	4 <i>i</i>	0.002		
	O3	-0.0044(9)	0.5	0.2581(9)	4 <i>i</i>	0.009		

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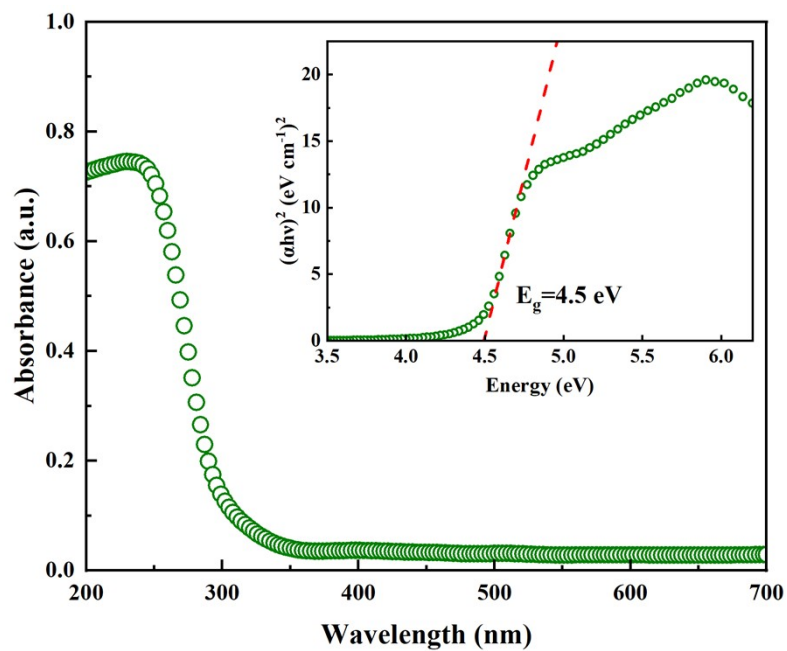


Figure S2. UV-vis diffuse-reflection absorption spectra of the Ga₂O₃ ceramic. The inset was direct optical band gap obtained by the Tauc plot method.