

Size-dependent nonlinear optical properties of $\text{Gd}_2\text{O}_2\text{S}:\text{Tb}^{3+}$ scintillators and their doped gel glasses

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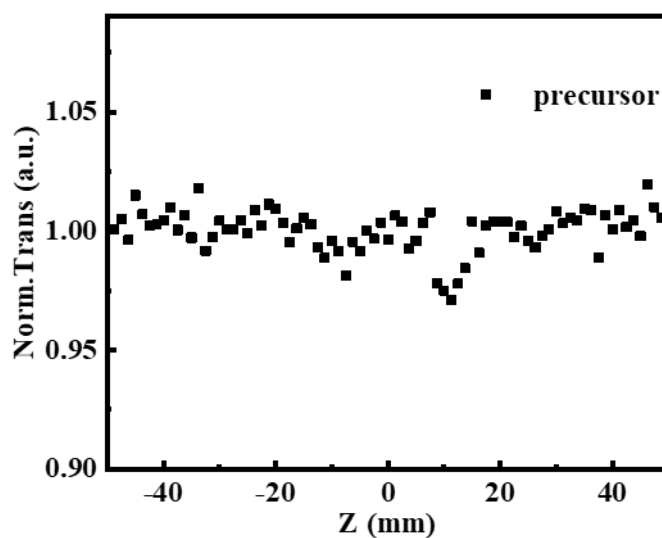


Figure S1. Z-scan data of precursor $\text{Gd}_2\text{O}(\text{CO}_3)_2 \cdot \text{H}_2\text{O} : \text{Tb}^{3+}$.

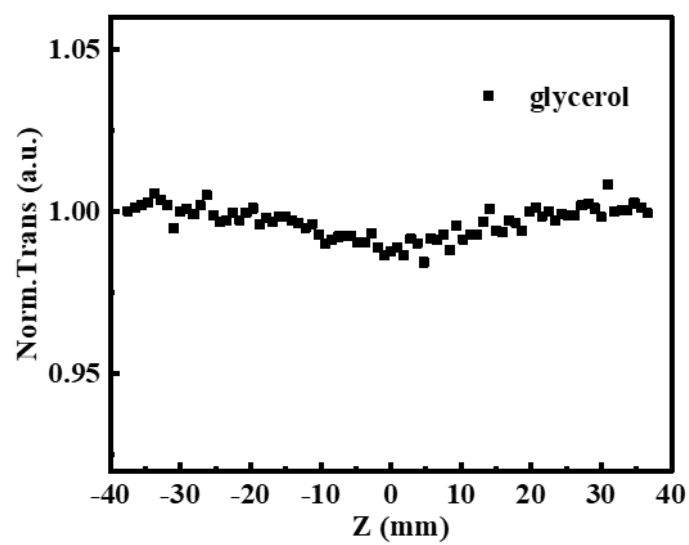


Figure S2. Z-scan data of glycerol.

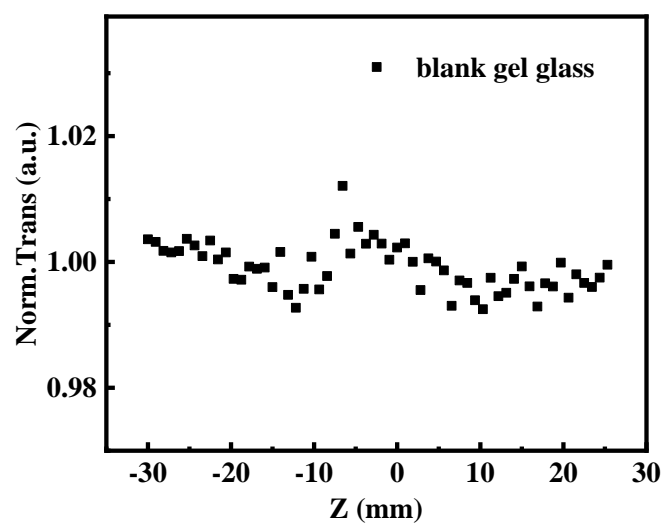


Figure S3. Z-scan data of blank gel glass.

Table S1. The onset limiting threshold and limiting threshold of GOS.

samples	λ (nm)	F_{ON}	F_{OL}
		(J·cm ⁻²)	(J·cm ⁻²)
GOS-11 μ m		0.99	2.17
GOS-1 μ m	532	1.43	2.90
GOS-0.45 μ m		1.69	3.53
GOS-11 μ m		2.8	4.18
GOS-1 μ m	1064	3.98	5.59
GOS-0.45 μ m		4.46	5.59

Table S2. Comparison of optical limiting properties of different materials and particle sizes.

Material	size	Solvent/M atrices	laser parameters	F_{ON} (J/cm ²)	F_{OL} (J/cm ²)	literature
WS ₄ Cu ₄ Cl ₂ (py) ₆		DMF	532 nm 8 ns		0.10	[22]
TiS ₂ nanosheet	350 nm	PMMA glasses	532 nm 7 ns	0.067	0.8	[10]
Sb nanosheet	Several hundred naometers	isopropyl alcoho	532 nm 1.8 ns	0.162	1.37	[23]
Graphene	A few micrometers	NMP	532 nm 6 ns	0.44	15.15	[24]
Graphene -Ormosil		gel glasses	532 nm 6 ns	0.03		[25]
	0.45 μ m			1.69	3.53	
GOS	1 μ m	glycerol	532 nm 10 ns	1.43	2.90	This work
	11 μ m			0.99	2.17	

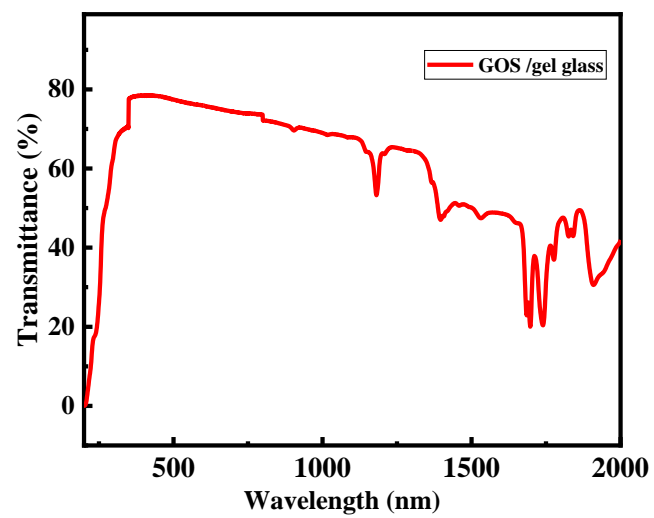


Figure S4. Transmission spectra of GOS /gel glass.