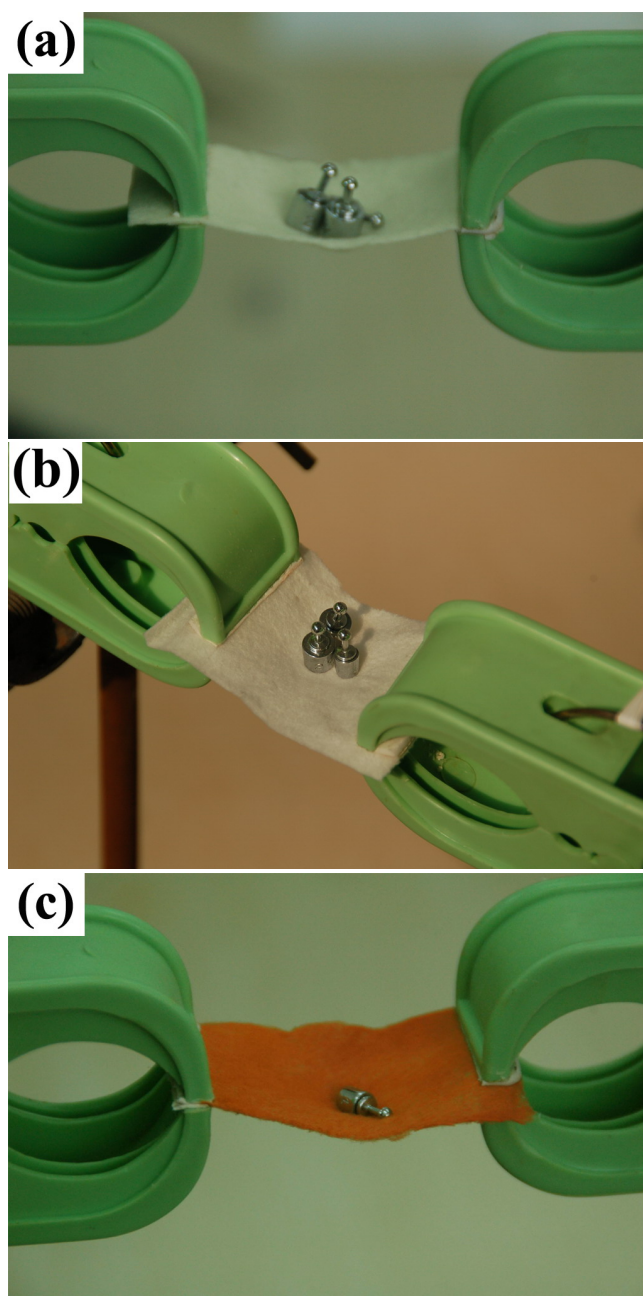


**Electronic supplementary information (ESI)**

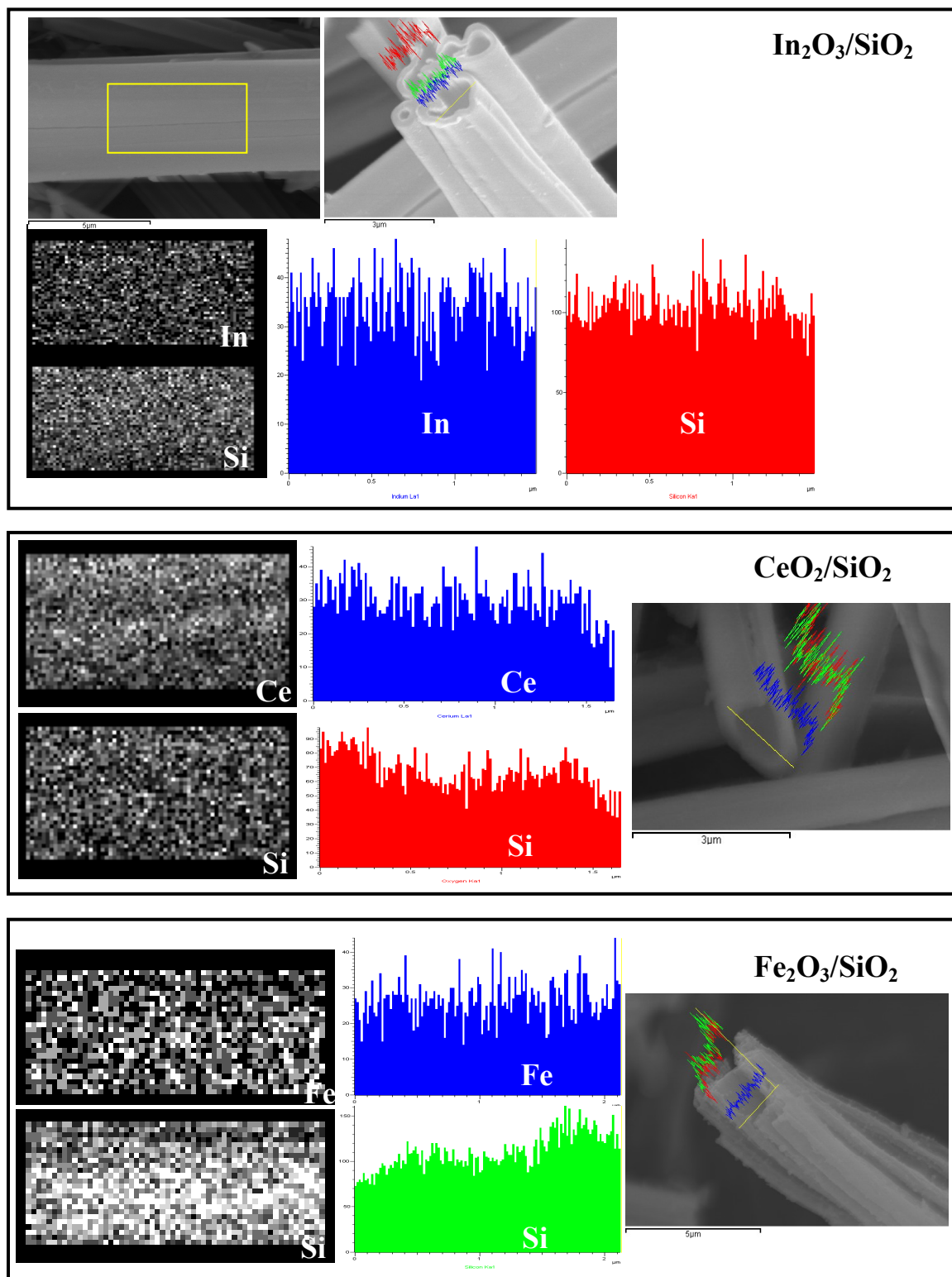
**Table S1**

**Important parameters of the synthesized samples**

Sample	Molar amount of metal salt	Si/M molar ratio		Particle size of metal oxide (nm)	BET area (m <sup>2</sup> /g)	Total pore volume (cm <sup>3</sup> /g)	Average pore diameter (nm)
		Mixed precursors	Final product				
SiO <sub>2</sub>	---	---	---	---	700	0.444	2.5
CeO <sub>2</sub> /SiO <sub>2</sub>	0.0046	10.65	2.3	<5	257	0.215	3.3
Fe <sub>2</sub> O <sub>3</sub> /SiO <sub>2</sub>	0.0062	7.96	3.4	8	296	0.24	3.4
In <sub>2</sub> O <sub>3</sub> /SiO <sub>2</sub>	0.0052	9.37	6.0	5	264	0.173	2.6
SiO <sub>2</sub> / SnO <sub>2</sub>	0.0089	5.54	0.31	10~15	160	0.283	7.1
H/SiO <sub>2</sub>	---	---	---	---	560	0.52	4.0



**Fig. S2.** Three textiles loaded with poises of different weights: a)  $\text{CeO}_2/\text{SiO}_2$ ; b)  $\text{In}_2\text{O}_3/\text{SiO}_2$ ; c)  $\text{Fe}_2\text{O}_3/\text{SiO}_2$ .



**Fig. S3.** Elemental mapping patterns of a selected area along the fiber length and elemental line profiles for three hollow composite fibers.