

**Table S1:** Textural properties (SSA,  $V_{BJH}$ ,  $D_{BJH}$ ) for aerogels after heat treatments at 600, 1000 and 1200°C, ramp rate of 600°C·h<sup>-1</sup>, and hold time of 20 min.

M	mol % MO <sub>x</sub>	600°C			1000°C			1200°C		
		SSA (m <sup>2</sup> /g)	$V_{BJH}$ (cm <sup>3</sup> /g)	$D_{BJH}$ (nm)	SSA (m <sup>2</sup> /g)	$V_{BJH}$ (cm <sup>3</sup> /g)	$D_{BJH}$ (nm)	SSA (m <sup>2</sup> /g)	$V_{BJH}$ (cm <sup>3</sup> /g)	$D_{BJH}$ (nm)
Y	15	125	0.64	16.3	24	0.19	26.8	5	0.01	12.2
	30	166	1.12	24.4	47	0.49	33.9	16	0.21	52.5
Yb	15	109	0.60	17.8	15	0.12	28.4	3	0.00	6.9
	30	119	0.86	25.6	26	0.28	37.0	8	0.11	59.4
Gd	15	127	0.70	18.5	40	0.31	25.4	5	0.04	23.1
	30	140	0.88	22.3	50	0.48	34.1	15	0.20	45.2
Ca	15	95	0.50	14.8	22	0.20	32.2	3	0.01	12.9
	30	119	0.80	22.3	28	0.36	44.8	9	0.09	43.8
Ce	15	72	0.60	22.2	41	0.27	24.0	5	0.00	8.0
	30	85	0.98	34.9	49	0.39	30.6	6	0.04	29.4