Figure SI1. XRD pattern and SEM image (a), HRTEM image (b), BET isotherm (c) and LA-XRD pattern (d) of the samples OMP.

Figure SI2. Dilatometric curve recorded during SPS (16 MPa/N₂/1400 °C) for samples OMP and HT-TGA curve of samples OMP as inset.
Figure SI3. XRD pattern and SEM image (inset) of samples HPM-800 and HPM-800 heat-treated at 1400 and 1700 °C in flowing nitrogen.

Figure SI4. Macroscopic pore-size distribution obtained by mercury-intrusion porosimetry of HPM-800.