

Electronic Supplementary Information

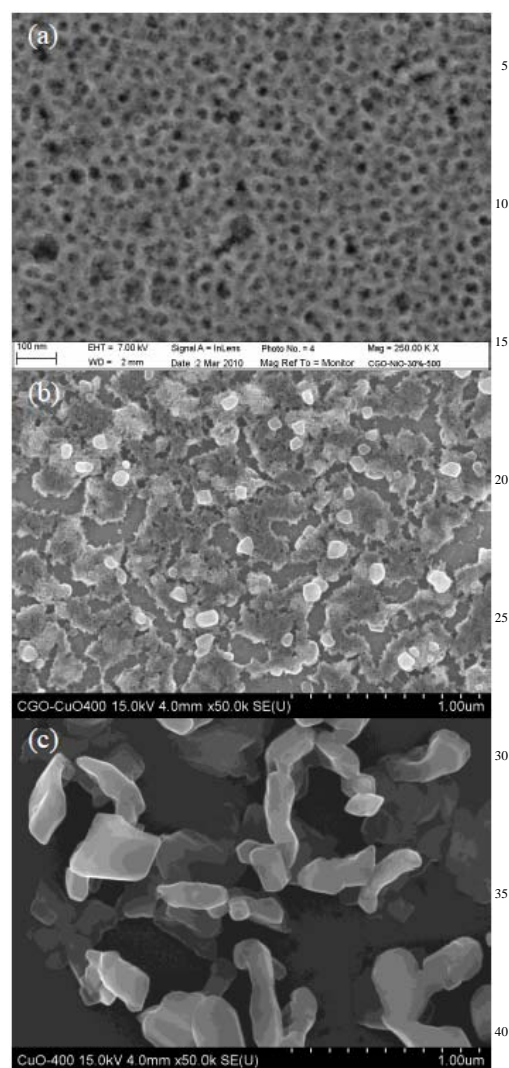


Fig.S1: FE-SEM images of NiO(50)/GDC(50) (a), CuO(50)/GDC(50) (b) mesoporous thin films calcined at 500°C and 400°C and pure-CuO (c) thin films calcined at 400°C, 10°C.min⁻¹ at air atmosphere.

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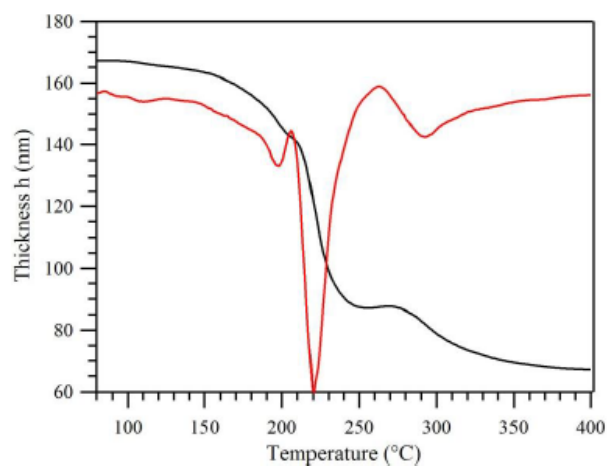


Fig.S2: Variation of the thickness h (black) as a function of the temperature (10°C.min⁻¹) for synthesized NiO(20)/GDC(80) mesoporous thin films stabilized at 80°C and derived of the thickness curve for NiO(20)/GDC(80) (red).

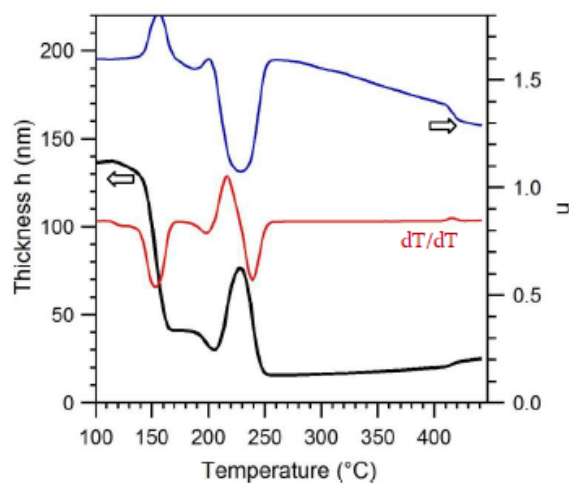


Fig.S3: Variation of the thickness h (black) and refractive index n (blue) as a function of the temperature (10°C.min⁻¹) for synthesized CuO mesoporous thin films stabilized at 80°C and derived of the thickness curve (red). At 230-250°C, CuO thin film become discontinue as single CuO particles (figA).

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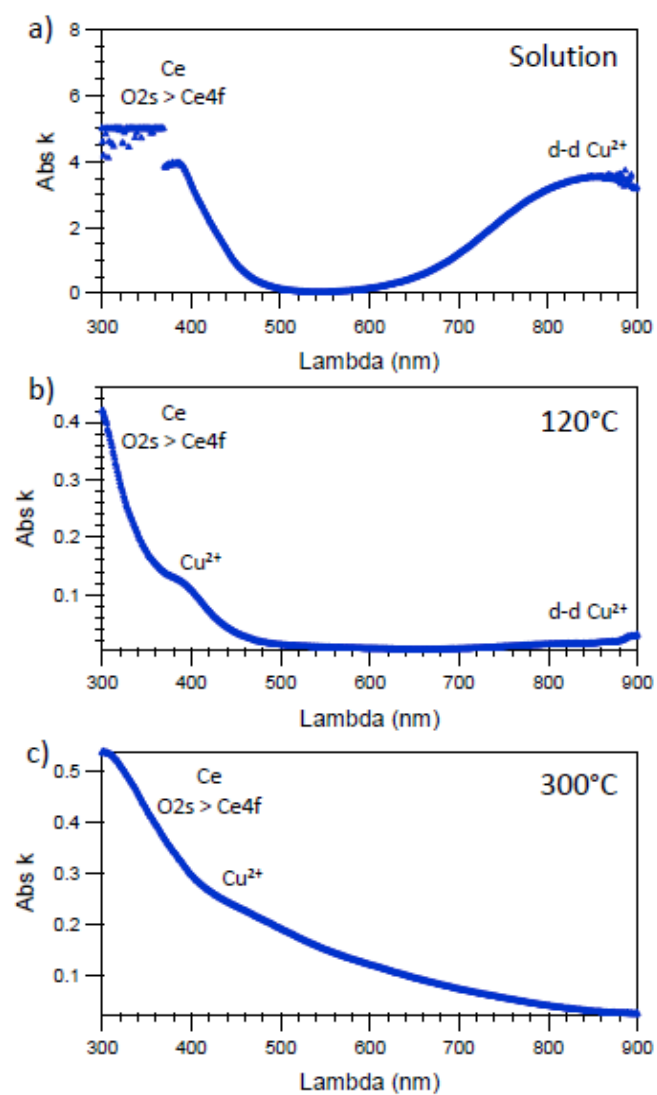


Fig.S4: UV-visible spectra of the precursors solution (a) and CuO-GDC mesoporous thin films calcined at 120°C (b) and 300°C (c) during 5 min at air atmosphere on glass substrate.

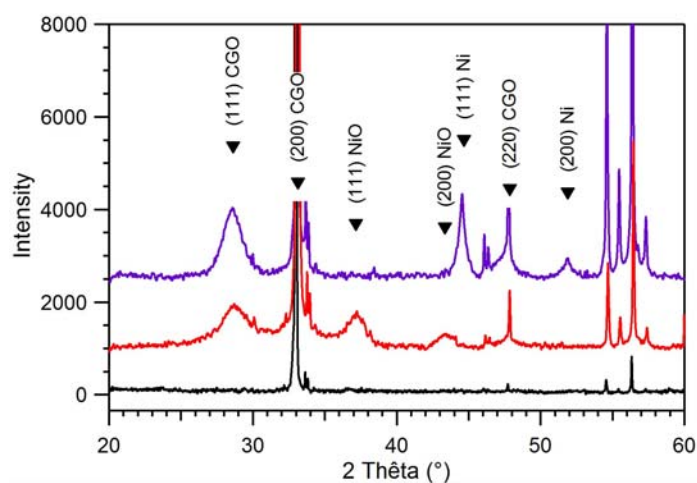


Fig.S5: Ex-situ XRD analyses of NiO to Ni reduction at 550°C under 10%H₂/N₂; in red the NiO/GDC mesoporous films and in purple 25 mesostructured Ni/GDC films.

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