

Supporting Information

Porous Chromium-Based Ceramic Monoliths; Oxides (Cr_2O_3), Nitrides (CrN), and Carbides (Cr_3C_2)

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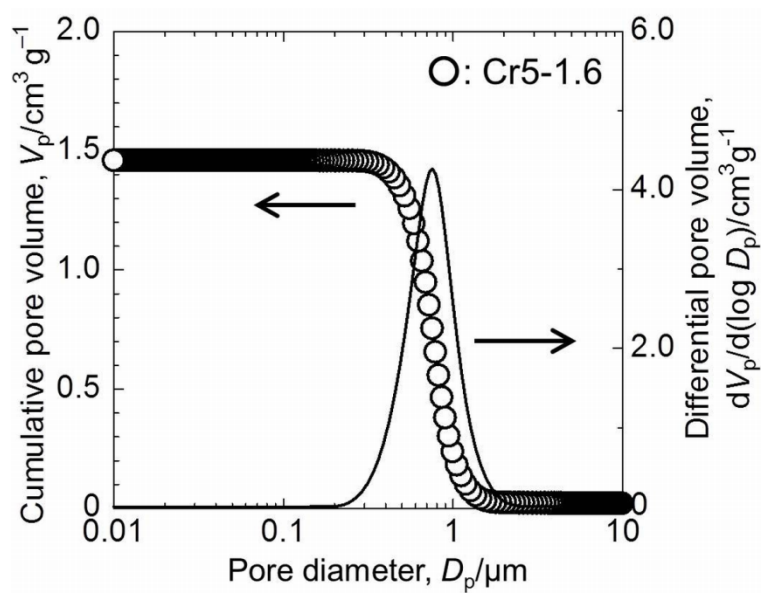


Figure S1 Macropore size distribution of Cr5-1.6 measured by mercury porosimetry. The mean macropore diameter is estimated as 0.76 μm .

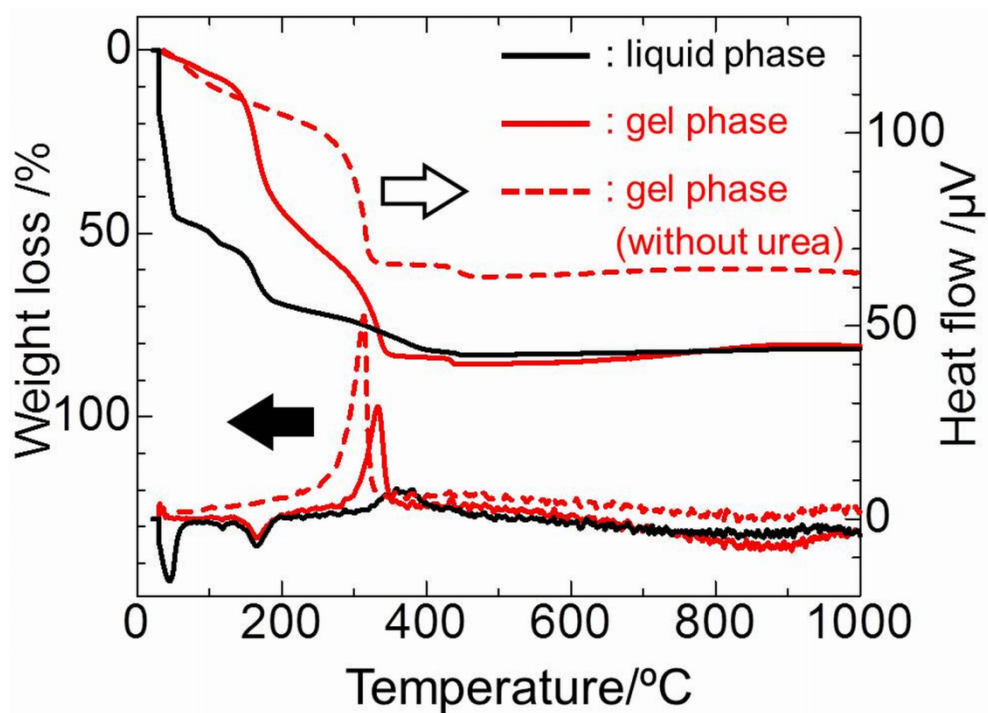


Figure S2 TG-DTA curves for the liquid phase of Cr5-1.6, and the gel phase of Cr5-1.6 and Cr0-1.6 (without urea) under air atmosphere.

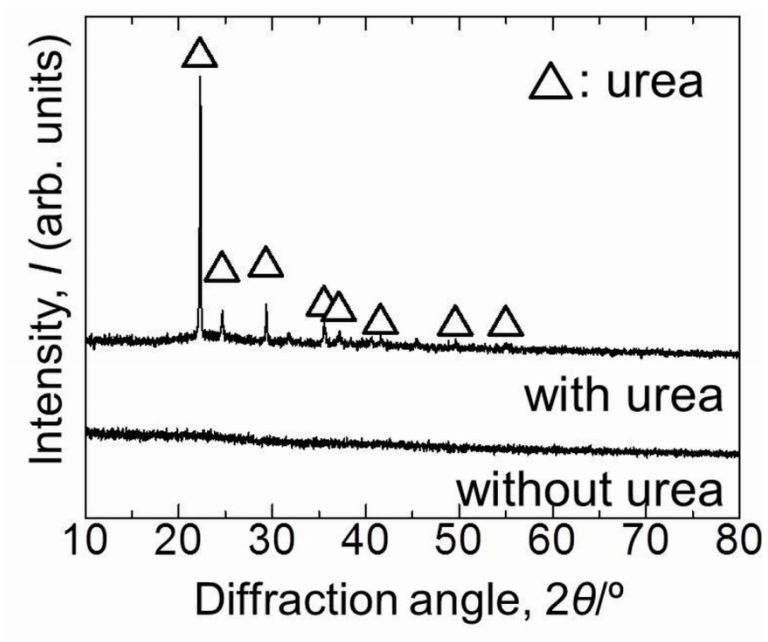


Figure S3 XRD patterns of the xerogels prepared with and without urea; Cr5-1.6 and Cr0-1.6.

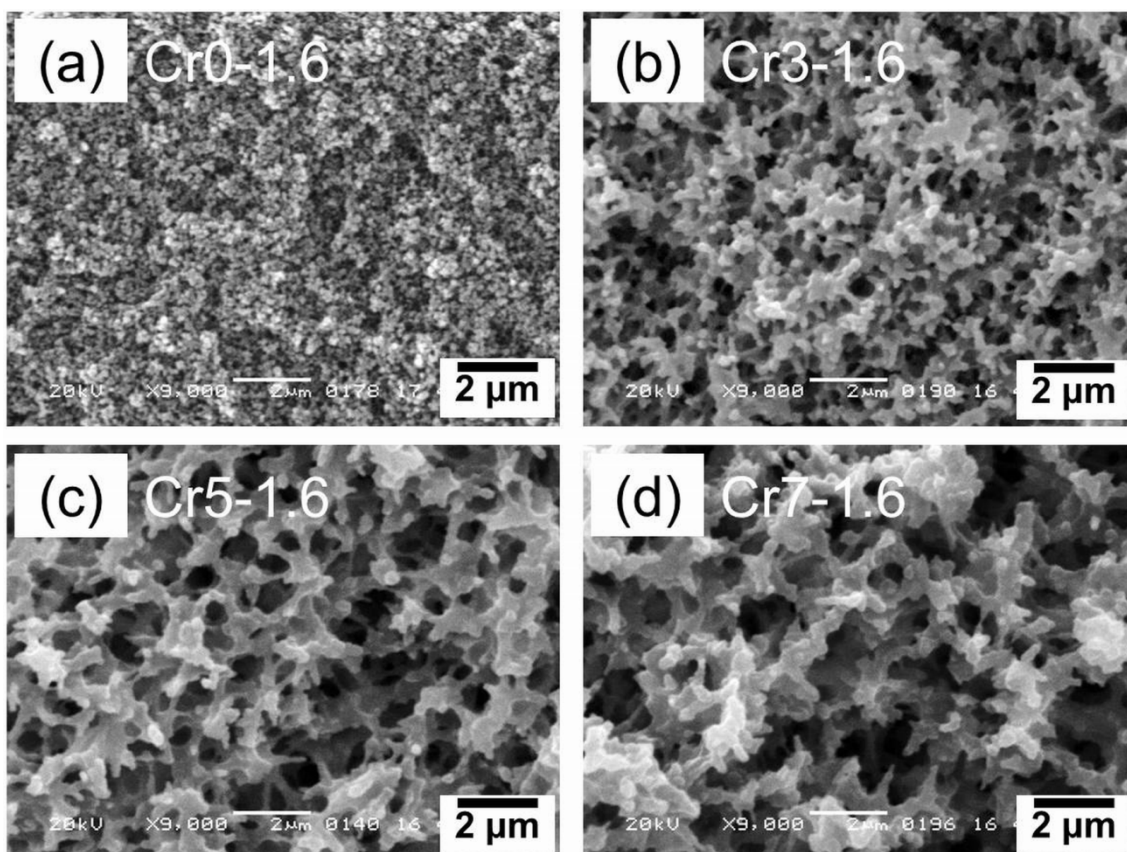


Figure S4 SEM images of the xerogels with varied amount of urea; (a) Cr0-1.6, (b) Cr3-1.6, (c) Cr5-1.6 and (d) Cr7-1.6.

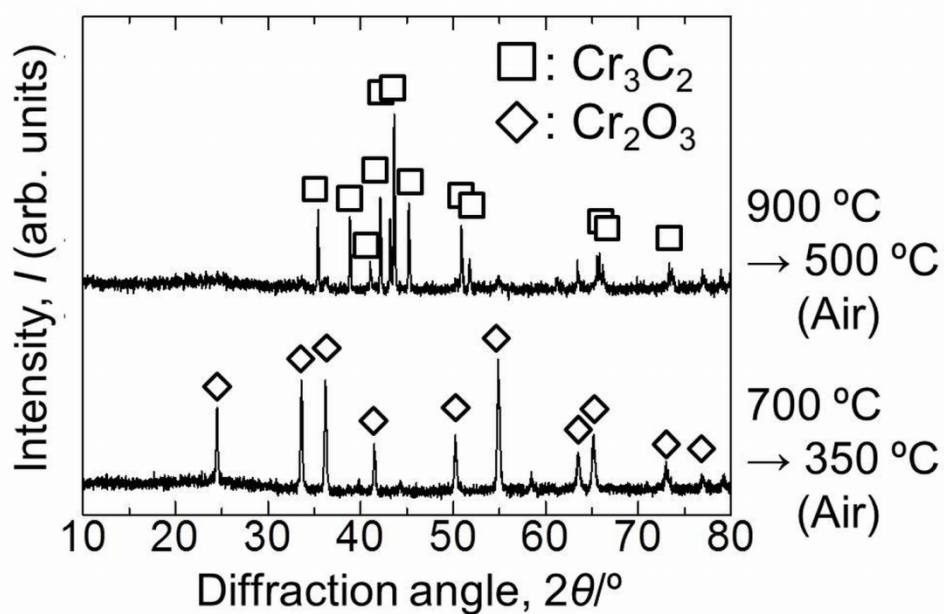


Figure S5 XRD patterns of the sample heat-treated at 700 °C under nitrogen atmosphere followed by heat-treated at 350 °C under air atmosphere, and the sample heat-treated at 900 °C under nitrogen atmosphere followed by heat-treated at 500 °C under air atmosphere.

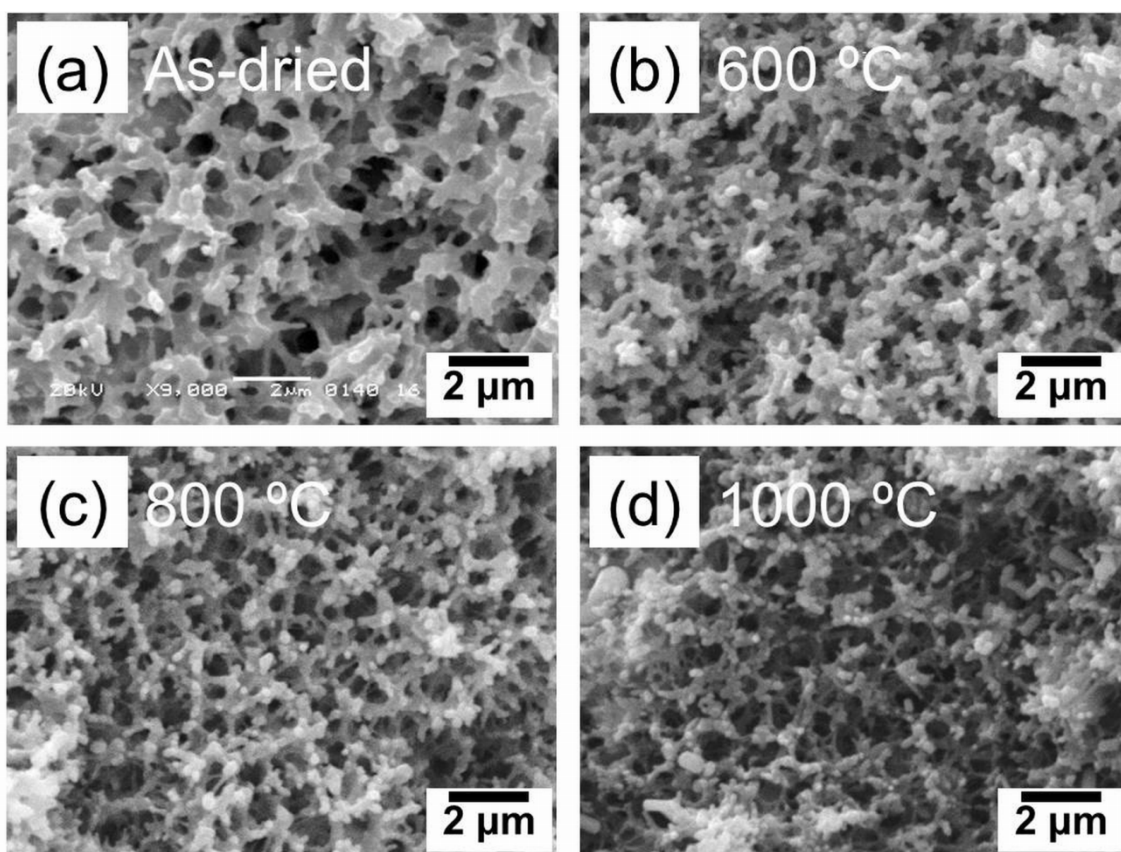


Figure S6 SEM images and appearances of the samples heat-treated at different temperatures; (a) as-dried, (b) 600 °C, (c) 800 °C and (d) 1000 °C.

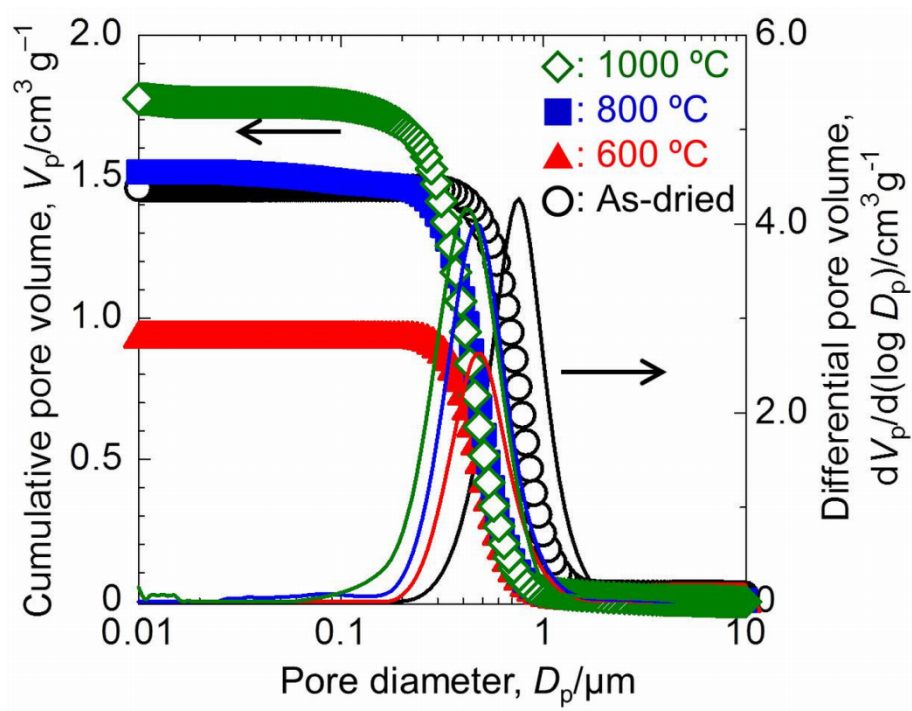


Figure S7 Mercury porosimetry results of the samples heat-treated at different temperatures.