Electronic Supplementary Information

Chromium Nitride and Carbide Containing Fibers: from Composites to Mesostructures

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Figure S2: Schematic representation of the cell employed for resistivity measurements.
Figure S3. XRD Pattern of the pyrolyzed carbon composite fiber residue.
Figure S4. Images of samples calcined after brief exposition to high humidity conditions.
Figure S5. NLDFT plots of pore size distribution for PUF containing samples.

Table S1. Nitrogen sorption data from PUF containing fibers calcined at different temperatures: BET specific surface area (SSA) and pore size obtained from NLDFT.

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>SSA (m² g⁻¹)</th>
<th>Pore diameter (nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>800</td>
<td>25</td>
<td>n.d.</td>
</tr>
<tr>
<td>900</td>
<td>25</td>
<td>n.d.</td>
</tr>
<tr>
<td>1200</td>
<td>85</td>
<td>2.0-8.0</td>
</tr>
<tr>
<td>1400</td>
<td>110</td>
<td>3.0</td>
</tr>
</tbody>
</table>
**Figure S6.** Nitrogen sorption isotherms of fibers calcined at 1400°C.

**Figure S7:** NLDFT Plots of the pore distributions from PAN-Cr and PAN-PUF-Cr at 1400°C.
**Figure S8.** SEM images of the cross section of fibers treated at 1400°C after conductivity measurements.

**Table S2.** Resistivity of thermally treated fibers.

<table>
<thead>
<tr>
<th>Product</th>
<th>Resistivity (Ω·cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAN-Cr @ 800°C</td>
<td>$5.82 \cdot 10^3$</td>
</tr>
<tr>
<td>PAN-PUF-Cr @ 800°C</td>
<td>1.71</td>
</tr>
<tr>
<td>PAN-Cr @ 1400°C</td>
<td>3.18</td>
</tr>
<tr>
<td>PAN-PUF-Cr @ 1400°C</td>
<td>2.77</td>
</tr>
<tr>
<td>PAN-PUF@1400°C</td>
<td>1.44</td>
</tr>
<tr>
<td>PAN@1400°C</td>
<td>0.43</td>
</tr>
</tbody>
</table>
Figure S9. Cyclic voltammograms of the PUF containing composite in nitrogen saturated solution (black) and oxygen saturated solution (red).