Supporting Information

Graphene Sheets like structured Carbon derived from Coir Pith Waste for Electrochemical Energy Storage Devices

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Fig. S1 Cumulative electrochemical charge discharge behaviour of CPC-800, CPC-850 and CPC-900 anodes vs. Na⁺/Na at 50 mA g⁻¹ current condition

Fig. S2 Cycling voltammogram of CPC//CPC capacitors at 300 mV s⁻¹ stability in 6M KOH electrolyte
**Fig. S3** Capacity retention behavior symmetric capacitor of CPC-850//CPC-850 symmetric cell at 1, 2 and 5 A g\(^{-1}\) current densities for 10000 cycles

**Fig. S4** Energy density values of CPC anodes at various current densities
Table S1 Cycling performance of CPC-850 anode upon extended cycles at 50 mA g$^{-1}$ current density condition in SIBs

<table>
<thead>
<tr>
<th>Cycle no.</th>
<th>Charge capacity (mAh /g)</th>
<th>Discharge capacity (mAh /g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>291</td>
<td>826</td>
</tr>
<tr>
<td>10</td>
<td>280</td>
<td>280</td>
</tr>
<tr>
<td>25</td>
<td>262</td>
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<td>75</td>
<td>247</td>
<td>244</td>
</tr>
<tr>
<td>100</td>
<td>246</td>
<td>240</td>
</tr>
<tr>
<td>125</td>
<td>243</td>
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<td>150</td>
<td>236</td>
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<tr>
<td>350</td>
<td>210</td>
<td>208</td>
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</table>

Table S2 Cycling performance of CPC-850 anode upon extended cycles at 1000 mA g$^{-1}$ current density condition vs. Na$^+$/Na

<table>
<thead>
<tr>
<th>Cycle No.</th>
<th>Charge capacity (mAh g$^{-1}$)</th>
<th>Discharge capacity (mAh g$^{-1}$)</th>
<th>Coulombic efficiency (in %)</th>
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<tr>
<td>1</td>
<td>130</td>
<td>134</td>
<td>95</td>
</tr>
<tr>
<td>2</td>
<td>130</td>
<td>131</td>
<td>99</td>
</tr>
<tr>
<td>50</td>
<td>120</td>
<td>121</td>
<td>98</td>
</tr>
<tr>
<td>100</td>
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<td>125</td>
<td>99</td>
</tr>
<tr>
<td>300</td>
<td>117</td>
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<td>114</td>
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</tr>
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<td>900</td>
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<tr>
<td>1000</td>
<td>114</td>
<td>114</td>
<td>99</td>
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</tbody>
</table>
**Table S3** Comparison of electrochemical performance of CPC anode in Sodium ion batteries with some other recently reported biomass derived carbon materials as anode

<table>
<thead>
<tr>
<th>Carbon material</th>
<th>Capacity (mAh g(^{-1}))</th>
<th>Rate capability (mAh g(^{-1}))</th>
<th>Reference</th>
</tr>
</thead>
</table>
| Microporous carbon derived from coir pith waste (CPC-850) | • 240 @ 0.05 A g\(^{-1}\) in 150\(^{th}\) cycle  
• 110 @ 1A g\(^{-1}\) for 1000 cycles | • 110 @ 2 A g\(^{-1}\) (5.37C)  
• 54 mAh g\(^{-1}\) @5 A g\(^{-1}\) (13.44C) | This work |
| Furfuryl alcohol derived spherical carbon             | 110 @ 0.2 A g\(^{-1}\) for 1000 cycles | 67 @ 1 A g\(^{-1}\) | [S1] |
| Human Hair derived carbon                             | 230 @ 0.05 Ag\(^{-1}\)     | 50 @ 2A g\(^{-1}\)              | [S2] |
| Garlic Peel derived carbon                            | 200 at 0.1 A g\(^{-1}\)    | 90 @ 1 A g\(^{-1}\)             | [S3] |
| Coconut oil derived carbon                            | 203 at 0.1 A g\(^{-1}\) in 50\(^{th}\) cycle | 82 @ 1 A g\(^{-1}\)            | [S4] |

**References:**


Table S4 Comparison of electrochemical performance of CPC electrode in EDLC with some other recently reported biomass derived carbon materials

<table>
<thead>
<tr>
<th>Carbon material</th>
<th>Activation Method</th>
<th>Capacitance (F g⁻¹)</th>
<th>Energy Density (Wh Kg⁻¹)</th>
<th>Electrolyte</th>
<th>Reference</th>
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</thead>
<tbody>
<tr>
<td>Microporous carbon derived from coir pith waste (CPC-850)</td>
<td>KOH</td>
<td>• 191 @ 0.1A g⁻¹</td>
<td>• 6.63 @ 0.1A g⁻¹</td>
<td>6 M KOH</td>
<td>This work</td>
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<td>• 128 @ 10 A g⁻¹</td>
<td>• 4.44 @ 0.1A g⁻¹</td>
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<tr>
<td></td>
<td></td>
<td>• 102 @ 30 A g⁻¹</td>
<td>• 2.43 @ 0.1A g⁻¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Broad beans shells derived carbon</td>
<td>KOH</td>
<td>129 @ 10 A g⁻¹</td>
<td>-</td>
<td>6 M KOH</td>
<td>[S5]</td>
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<tr>
<td>Rice husk derived carbon</td>
<td>KOH</td>
<td>147 @ 0.1A g⁻¹</td>
<td>5.11 @ 0.1A g⁻¹</td>
<td>6 M KOH</td>
<td>[S6]</td>
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<td>Natural wood derived carbon</td>
<td>KOH</td>
<td>200 @ 50 mV/s</td>
<td>-</td>
<td>6 M KOH</td>
<td>[S7]</td>
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<tr>
<td>Waste Paper derived carbon</td>
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<td>95 @ 25 mV/s</td>
<td>-</td>
<td>6 M KOH</td>
<td>[S8]</td>
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<tr>
<td>Scrap waste tire derived carbon</td>
<td>H₃PO₄</td>
<td>120 @ 1A g⁻¹</td>
<td>-</td>
<td>6 M KOH</td>
<td>[S9]</td>
</tr>
</tbody>
</table>

References:


