**Preparation and Properties of a Novel Form-stable Phase Change Material Based on Gelator**

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Received (in XXX, XXX) Xth XXXXXXXXX 20XX, Accepted Xth XXXXXXXXX 20XX

Cite this: DOI: 10.1039/b000000x

**Electronic Supplementary Information**

**A.**

**Preparation of 4,4'-diaminodiphenylmethane**

**B.**

**D.**

**C.**

**Property Evaluation**

**D.**

**Supplementary Table**

**Supplementary Figures**

**References**

**Acknowledgements**

**Author Contributions**

**Competing Interests**

**Funding**

**Conflict of Interest**
Fig. S1  POM images (×200) of neat G18.

Fig. S2  SEM images of G18/paraffin composite xerogels at different concentration: (a) 0.5 wt%, (b) 1 wt%, (c) 2 wt%, (d) 3 wt%, (e) 4 wt%, (f) 6 wt%, (g) 8 wt%, (h) 10 wt%, respectively. Scale bar = 5 μm.
Fig. S3  SEM images Gm/paraffin composite xerogels at the same concentration: (a) G8/paraffin composite, (b) G10/paraffin composite, (c) G12/paraffin composite, (d) G14/paraffin composite, (e) G16/paraffin composite, respectively. Concentration = 3 wt%. Scale bar = 5 μm.

Table S1  The thermal characteristics of Gm/paraffin composites (m = 8, 10, 12, 14, 16).

<table>
<thead>
<tr>
<th>Composition</th>
<th>Melting T_m (°C)a</th>
<th>ΔHobs m (J g⁻¹)a</th>
<th>ΔHTme m (J g⁻¹)b</th>
<th>Freezing T_f (°C)a</th>
<th>ΔHobs f (J g⁻¹)a</th>
<th>ΔHTme f (J g⁻¹)b</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 wt%G8/paraffin</td>
<td>58.3</td>
<td>170.5</td>
<td>183.6</td>
<td>51.9</td>
<td>172.1</td>
<td>178.9</td>
</tr>
<tr>
<td>3 wt%G10/paraffin</td>
<td>58.5</td>
<td>180.1</td>
<td>183.6</td>
<td>51.9</td>
<td>181.8</td>
<td>178.9</td>
</tr>
<tr>
<td>3 wt%G12/paraffin</td>
<td>58.1</td>
<td>182.7</td>
<td>183.6</td>
<td>51.7</td>
<td>184.1</td>
<td>178.9</td>
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<tr>
<td>3 wt%G14/paraffin</td>
<td>58.8</td>
<td>172.8</td>
<td>183.6</td>
<td>51.1</td>
<td>172.8</td>
<td>178.9</td>
</tr>
<tr>
<td>3 wt%G16/paraffin</td>
<td>59.2</td>
<td>171.8</td>
<td>183.6</td>
<td>50.6</td>
<td>177.0</td>
<td>178.9</td>
</tr>
</tbody>
</table>

a Evaluated by DSC during the second heating process at a rate of 5 °C min⁻¹ under nitrogen atmosphere.
b Calculated by multiplying the weight percentage of paraffin in the composite PCM by the melting or freezing enthalpies of pure paraffin.