Supporting Information

**Phosphate glasses via coacervation route containing CdFe$_2$O$_4$ nanoparticles: a structural, optical and magnetic characterization**

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S1- XRD pattern of glasses

![XRD pattern of glasses](image)

**Fig. 1** X-ray of PG and PGs containing CdFNPs.

S2- Scanning transmission electron microscopy (STEM) image using annular dark field (ADF) detector followed by elemental mapping through EDS (energy dispersive spectroscopy)

![STEM image with elemental mapping](image)

**Fig. 2** Scanning transmission electron microscopy (STEM) image using (a) annular dark field (ADF) detector followed by elemental mapping through EDS (energy dispersive spectroscopy) images for PG-4%CdFNPs for elements (b) Cd-K, (c) Fe-K and (d) O-K.
Fig. 3 Scanning transmission electron microscopy (STEM) image using (a) annular dark field (ADF) detector followed by elemental mapping through EDS (energy dispersive spectroscopy) for PG-8%CdFNPs for elements (b) Fe-K, (c) Cd-K and (d) Si-K.

S3- Table with all the values obtained in the thermal analysis

Table 1 Characteristic temperatures of Tg, Tx and Tp obtained for the vitreous samples.

<table>
<thead>
<tr>
<th>Glass sample</th>
<th>Tg(°C)</th>
<th>Tx(°C)</th>
<th>Tp(°C)</th>
<th>Tx-Tg(°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG</td>
<td>416</td>
<td>570</td>
<td>609</td>
<td>154</td>
</tr>
<tr>
<td>PG-1%CdFNPs</td>
<td>425</td>
<td>589</td>
<td>657</td>
<td>164</td>
</tr>
<tr>
<td>PG-4%CdFNPs</td>
<td>430</td>
<td>622</td>
<td>675</td>
<td>192</td>
</tr>
<tr>
<td>PG-8%CdFNPs</td>
<td>444</td>
<td>648</td>
<td>722</td>
<td>204</td>
</tr>
</tbody>
</table>

(estimate error is ± 2 °C for Tg and Tx)