Electronic supplementary information

A reversible SCSC transformation from a blue metamagnetic framework to a pink antiferromagnetic ordering layer exhibiting concomitant solvatochromic and solvatomagnetic effects

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Fig. S1 PXRD patterns for the interconversion between 1 and 2.
Fig. S2 TG curves for 1 and 2.
**Fig. S3** Local coordination environments of Co$^{II}$ ions in 1 (H atoms were omitted for clarity, symmetry codes: $A = -x, 1-y, 2-z; B = -x, 2-y, 2-z; C = 0.5-x, 1.5-y, 2-z; D = x, 1-y, 0.5+z$).
**Fig. S4** Local coordination environments of Co$^{II}$ ions in 2 (H atoms were omitted for clarity, symmetry codes:

A = 1 − x, y = 0.5, 1.5 − z; B = 1 + x, 1.5 − y, 0.5 + z; C = 1 + x, 2.5 − y, 0.5 + z; D = −x, 2 − y, 1 − z; E = −x, 3 − y, 1 − z; F = 1 − x, 0.5 + y, 1.5 − z).
Table S1 Hydrogen-bonding Parameters for 2.

<table>
<thead>
<tr>
<th>D–H–A</th>
<th>d (D–H)</th>
<th>d (H–A)</th>
<th>d (D–A)</th>
<th>∠DHA</th>
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<tr>
<td>O10–H10B–O7</td>
<td>0.840</td>
<td>2.09</td>
<td>2.928(5)</td>
<td>171</td>
</tr>
<tr>
<td>O11–H11A–O6</td>
<td>0.840</td>
<td>1.96</td>
<td>2.753(4)</td>
<td>157</td>
</tr>
</tbody>
</table>

* Symmetry transformations used to generate equivalent atoms: *a* 1 – x, 1 – y, 2 – z.
Fig. S5 3D supramolecular network of 2 formed by O–H⋯O hydrogen-bonding interactions.
Fig. S6 Hysteresis loop for 1 at 2 K.
Fig. S7 The $\frac{dM}{dH}$ derivative curve for 1 at 2 K.
Fig. S8 Real ($\chi'$) and imaginary ($\chi''$) $ac$ magnetic susceptibility in zero applied dc field at 10 and 997 Hz for 2.