Supplementary Information for “Tuneable Fluorescence Enhancement over Nanostructured ZnO Arrays with Controlled Morphology”

Tiesheng Wang, a Anthony Centeno, b Daniel Price, a Jing S. Pang, a Mary P. Ryan, a Fang Xie*a

a Department of Materials, Imperial College London, London, SW7 2AZ, United Kingdom

b Department of Electrical and Electronic Engineering, Xi’an Jiaotong Liverpool University, 111 Ren’ai Road, Suzhou Dushu Lake Higher Education Town, Jiangsu, 215123, China

* E-mail: f.xie@imperial.ac.uk
**Table S1.** KCl concentration used for growing aligned NR forests and NFs.

<table>
<thead>
<tr>
<th>KCl concentration used</th>
<th>aligned NR forests</th>
<th>NFs</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 mM, 150 mM, 250 mM,</td>
<td>50 mM, 100 mM, 250 mM, 300 mM</td>
<td></td>
</tr>
<tr>
<td>300 mM</td>
<td></td>
<td>300 mM</td>
</tr>
</tbody>
</table>

**Supplementary Figures**

*Figure S1.* Wurtzite ZnO crystal structure showing a, b and c axis are reconstructed from reference 1 with Mercury 3.9. The calculated morphology of the structure (in blue) is shown on the bottom.
Figure S2. SEM images and rod diameter distributions of aligned NR forests growing in solution with different KCl concentration: a) 100 mM, b) 150 mM, c) 250 mM and d) 300 mM.
Figure S3. SEM images and rod diameter distributions of NFs growing in solution with different KCl concentration: a) 50 mM, b) 100 mM, c) 250 mM and d) 300 mM.
Figure S4. The mean diameter of NRs versus KCl concentration. The mean diameter can be approximated as a linear function of KCl concentration (mean diameter = m.concentration+c). For aligned NR forests, \( m = 0.192 \pm 0.021 \) and \( c = 35.9 \pm 4.3 \). For nanoflower, \( m = 0.112 \pm 0.013 \) and \( c = 38.6 \pm 2.4 \).

Figure S5. Relative diffuse reflectance versus diameter of NRs top surface for NFs.
Reference