Supporting Information

Giant UV photoresponse of GaN nanowire photodetector through effective Pt nanoparticles coupling

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Supporting Information

**Figure S1.** EDS profile of GaN nanowires with Pt NPs decoration. Inset is the table of elements content.

**Figure S2.** (a) TEM image of colloidal Pt NPs. (b) Statistical distribution and Gaussian fitting of the diameters of Pt NPs.

**Figure S3** STEM images of GaN nanowire with (a) 10 h, (b) 24 h, (c) 48 h Pt NPs deposition. (d-f) are the EDS profiles of (a)-(c), respectively. (g) is the table of elements content for Pt-GaN nanowires with different Pt NPs deposition time.

**Figure S4.** (a) and (b) are the responsivity and EQE of bare GaN nanowire UV photodetectors as a dependence on light intensity, respectively. (c) and (d) are the
responsivity and EQE of Pt-GaN nanowire UV photodetectors as a function of light intensity, respectively.

Figure S1

![Spectra of elements](Spectrum_3.png)

<table>
<thead>
<tr>
<th>Elements</th>
<th>at%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ga</td>
<td>66.59</td>
</tr>
<tr>
<td>N</td>
<td>32.95</td>
</tr>
<tr>
<td>Pt</td>
<td>0.46</td>
</tr>
</tbody>
</table>

Full Scale 1783 cts Cursor: 0.000

Figure S2

![Scanning electron microscope image](a.png)

(a) SEM image showing Pt-GaN nanowires with a scale bar of 20 nm. 

(b) Diameter distribution histogram.