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Figure S1. Short-circuit photocurrents of DSSCs with bare TiO₂, Au nanoparticles embedded in TiO₂ without dye molecules, and 5 nm Au thin film without the second annealing deposited between the TiO₂ layer and the dye monolayer as working electrodes.
Figure S2. (a) Absorption spectra of bare TiO$_2$ and Au nanoparticles embedded in TiO$_2$ without dye molecules. (b) Photocurrent spectra of photovoltaic cells with bare TiO$_2$ and Au nanoparticles embedded in TiO$_2$ without dye molecules as working electrodes.
The power conversion efficiency $\eta$ of the solar cells is determined by

$$\eta(\%) = \frac{V_{oc} I_{sc} FF}{P_{in} S} \times 100$$  \hspace{1cm} (1)$$

where $V_{oc}$ is the open-circuit photovoltage, $I_{sc}$ is the short-circuit photocurrent, and $P_{in}S$ is the incident laser power times the working electrode area (60 mW). The fill factor $FF$ is given by

$$FF = \frac{V_m I_m}{V_{oc} I_{sc}}$$  \hspace{1cm} (2)$$

where $V_m$ and $I_m$ are the voltage and the current at the maximum output power point, respectively.
Table S1 Comparison of photovoltaic device performances of Au nanoparticle/dye/TiO₂ configuration #2 with and without the second annealing.

<table>
<thead>
<tr>
<th>Working Electrode</th>
<th>$V_{oc}$ (V)</th>
<th>$I_{sc}$ (mA)</th>
<th>FF(%)</th>
<th>η (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without annealing</td>
<td>0.48</td>
<td>0.34</td>
<td>52</td>
<td>0.14</td>
</tr>
<tr>
<td>With annealing</td>
<td>0.73</td>
<td>0.86</td>
<td>58</td>
<td>0.60</td>
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