Transition metal ion-doped In2O3 nanocubes: Investigations of their
catalytic degradation activity under sunlight

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Table T1: Strain obtained from the Williamson-Hall fitting of the XRD data.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Sample</th>
<th>Strain, ε</th>
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<tbody>
<tr>
<td>1.</td>
<td>In₂O₃</td>
<td>4.75×10⁻³</td>
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<tr>
<td>2.</td>
<td>Cu-In₂O₃</td>
<td>5.21×10⁻³</td>
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<tr>
<td>3.</td>
<td>Ni-In₂O₃</td>
<td>10.71×10⁻³</td>
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<tr>
<td>4.</td>
<td>Co-In₂O₃</td>
<td>4.85×10⁻³</td>
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<tr>
<td>5.</td>
<td>Fe-In₂O₃</td>
<td>9.98×10⁻³</td>
</tr>
<tr>
<td>6.</td>
<td>Mn-In₂O₃</td>
<td>4.42×10⁻³</td>
</tr>
</tbody>
</table>
Figure S1. The XRD patterns of the In$_2$O$_3$ for different concentration of the dopant ions. Asterisk marks the impurity phases in each sample when the concentration is increased. The XRD patterns for Mn, Fe, Co and Ni ion doped In$_2$O$_3$ are given respectively in (a), (b), (c) and (d).
**Figure S2.** Change in FWHM of the Raman band at 307 cm⁻¹ in In₂O₃ for various doping ions.

**Figure S3.** Particle size distribution in (a) In₂O₃, (b) 1wt% Mn-In₂O₃, (c) 1wt% Fe-In₂O₃, (d) 1wt% Co-In₂O₃, (e) 1wt% Ni-In₂O₃ and (f) 1wt% Cu-In₂O₃.
Figure S4. XEDS spectra analysis data from FESEM showing elemental composition of the pure and transition metal ion doped In$_2$O$_3$. 

(a) (b) (c) (d) (e) (f)
Figure S5. Kubelka-Munk plots for pure and different metal ions doped In$_2$O$_3$ nanocubes.
Figure S6. UV-vis absorption spectra of photocatalytic degradation MB under Sunlight irradiation for different time interval by 1wt% Ni-In$_2$O$_3$ photocatalyst and also in the presence of different scavengers SO (sodium oxalate) and TBA (tert butyl alcohol) with 1wt% Ni-In$_2$O$_3$ photocatalyst.
Figure S7. ESI-MS spectra of photodegradation of MB for the time period varied from 0 min to 270 minutes in the presence of 1wt% Ni-In$_2$O$_3$ photocatalyst.
Figure S8. UV-vis absorption spectra of photodegradation of MB before and 270 minutes of visible light irradiation in the presence of 1wt% Ni-In$_2$O$_3$ photocatalyst for three different consecutive cycles. (a) 1$^{st}$ cycle, (b) 2$^{nd}$ cycle (c) 3$^{rd}$ cycle and (d) 4$^{th}$ cycle of photocatalysis reaction.

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