Supporting Information

for

Nitrogen-Doped Graphene-Supported Copper Complex: A Novel Photocatalyst for CO$_2$ Reduction under Visible Light Irradiation

Pawan Kumar$^d$, Harshal P. Mungse$^d$, Om P. Khatri and Suman L. Jain$^*$

Chemical Science Division, Indian Institute of Petroleum, Dehradun - 248005, India
Email: suman@iip.res.in
**Figure S1.** UV-Vis spectrum of Copper complex in the range of 220-800 nm. Inset highlight the absorbance in the range of 600-800 nm.

**Figure S2**
**Figure S2.** FESEM micrographs and corresponding elemental mapping images of GrN$_{700}$-CuC. The uniform distribution of copper and chlorine revealed the regular grafting of copper complex on the N-doped graphene.

**Figure S3**

![Figure S3](image)

**Figure S3.** Gas chromatogram of photoreaction product after 24 hours of visible light irradiation using GrN$_{700}$-CuC catalyst.

**Figure S4**
Figure S4. HPLC chromatogram of photoreaction product after 24 hours of visible light irradiation using GrN$_{700}$-CuC catalyst, based on UV and RI detectors signals.

Figure S5. GC calibration curve for the quantification of methanol.
Table S1. Elemental Distribution (atomic %) based on XPS analysis of samples

<table>
<thead>
<tr>
<th>Sample Description</th>
<th>C</th>
<th>O</th>
<th>N</th>
<th>Cu</th>
<th>Cl</th>
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<tr>
<td>GO</td>
<td>64.10</td>
<td>35.90</td>
<td>-</td>
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<tr>
<td>GrN_{700}-CuC</td>
<td>84.46</td>
<td>6.93</td>
<td>6.01</td>
<td>1.96</td>
<td>0.64</td>
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