

## Supporting information

# Photocatalytic Hydrogen Evolution Using Bi-Metallic (Ni/Pt) $\text{Na}_2\text{Ti}_3\text{O}_7$ Whiskers: Effect of the Deposition Order

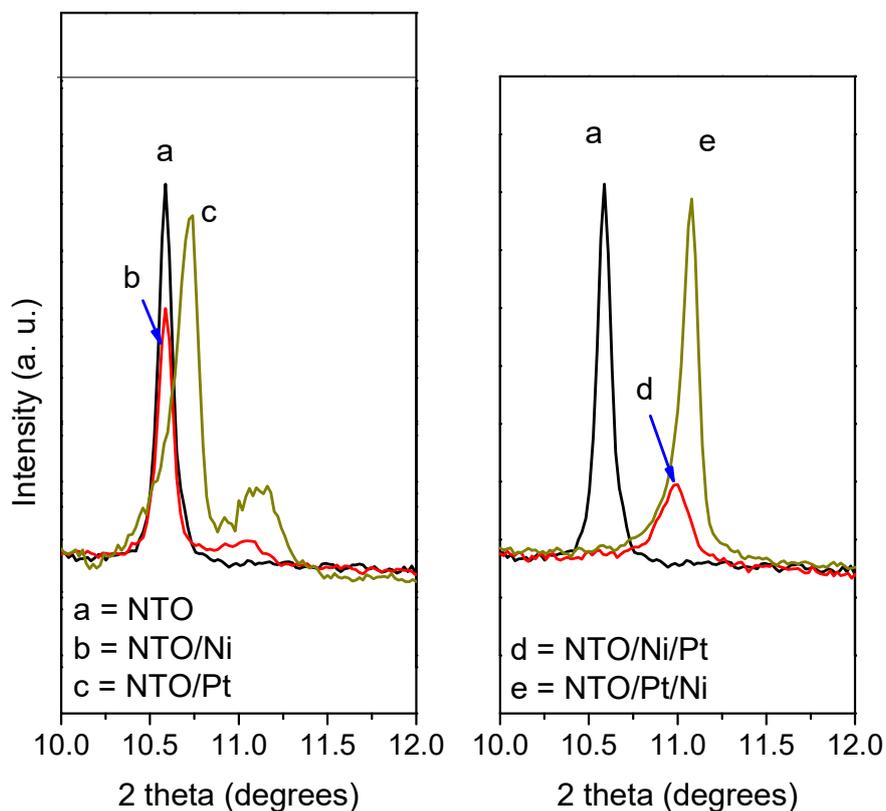
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**Figure S1.** Close view of (0 0 1) main reflection on the prepared catalysts.

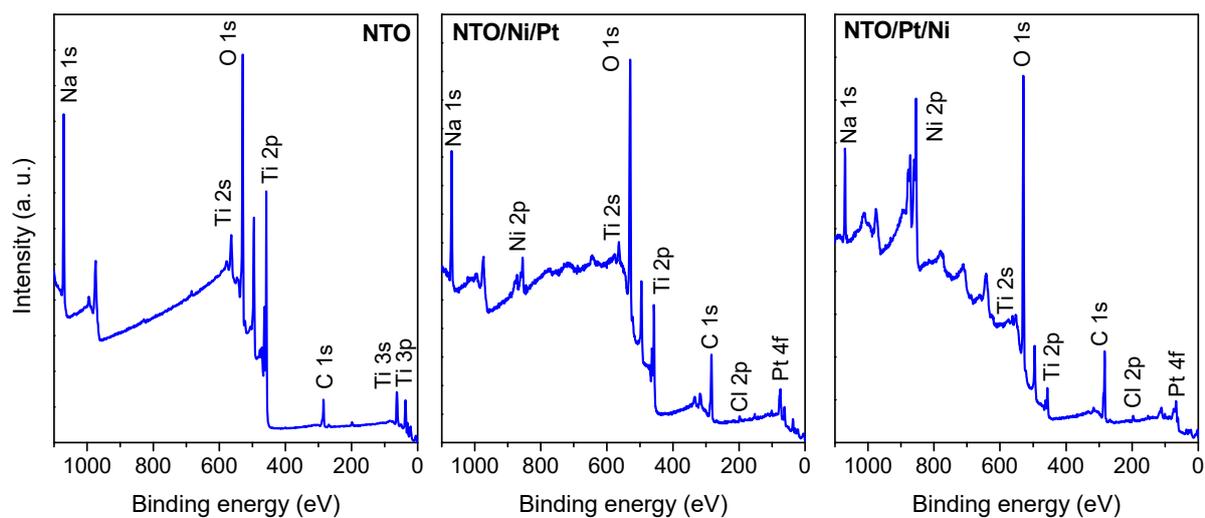


Figure S2. XPS survey spectra of NTO, NTO/Ni/Pt, and NTO/Pt/Ni samples.

Table S1. Semi-quantitative analysis of XPS peaks of bi-metallic samples.

| Sample                         | Peak area |                  |                  |          |                  |                  |                  |
|--------------------------------|-----------|------------------|------------------|----------|------------------|------------------|------------------|
|                                | Na 1s     | Ti <sup>4+</sup> | Ti <sup>3+</sup> | O 1s     | Ni <sup>2+</sup> | Pt <sup>2+</sup> | Pt <sup>4+</sup> |
| NTO/Ni/Pt                      | 10,926.3  | 8540.5           | 3094.2           | 19,980.2 | 2418.7           | 680.4            | 2102.3           |
| NTO/Pt/Ni                      | 9431.5    | 2730.6           | 1258.7           | 28,170.0 | 15,121.5         | 449.4            | 308.2            |
| NTO/Pt/Ni<br>post-<br>reaction | 11,401.9  | 328.46           | 291.1            | 21,072.7 | 2415.4           | -                | -                |

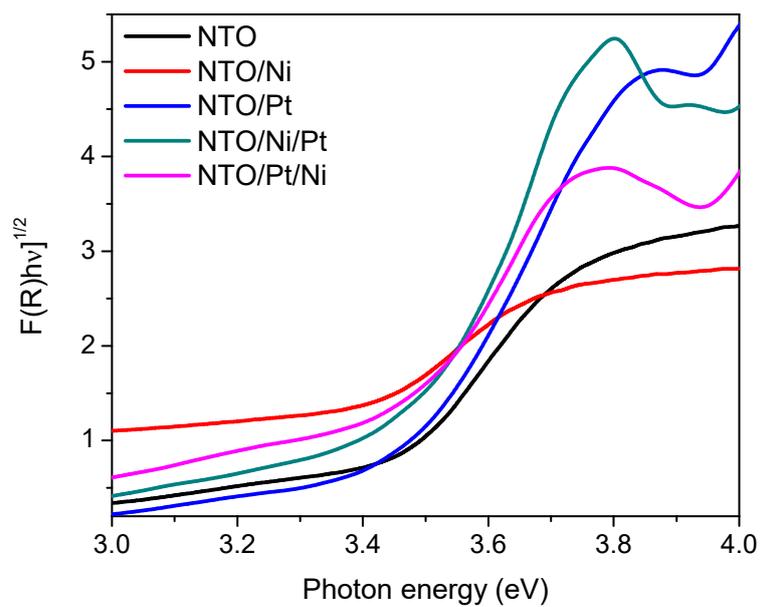


Figure S3. Kubelka-Munk spectra of Na<sub>2</sub>Ti<sub>3</sub>O<sub>7</sub> bare and deposited with Ni and Pt metals.

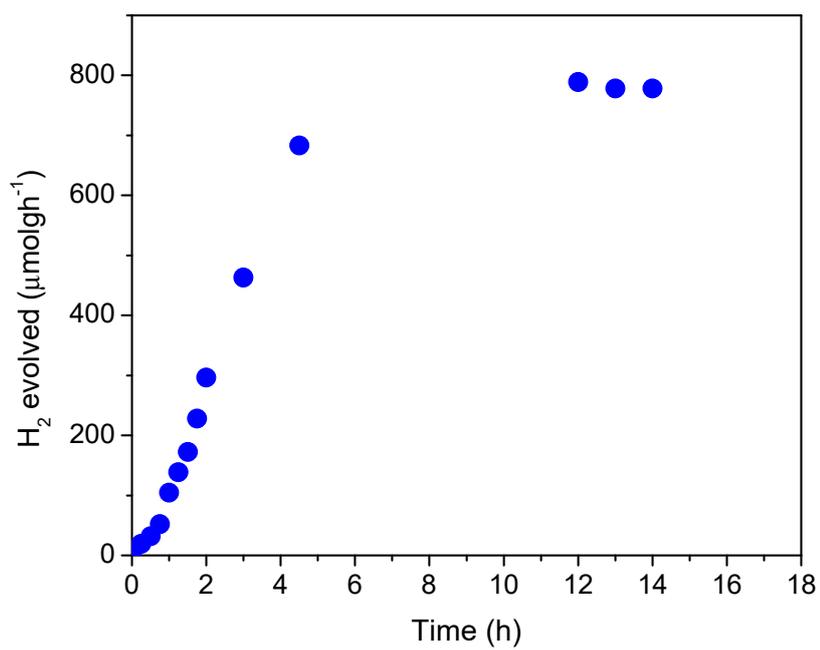
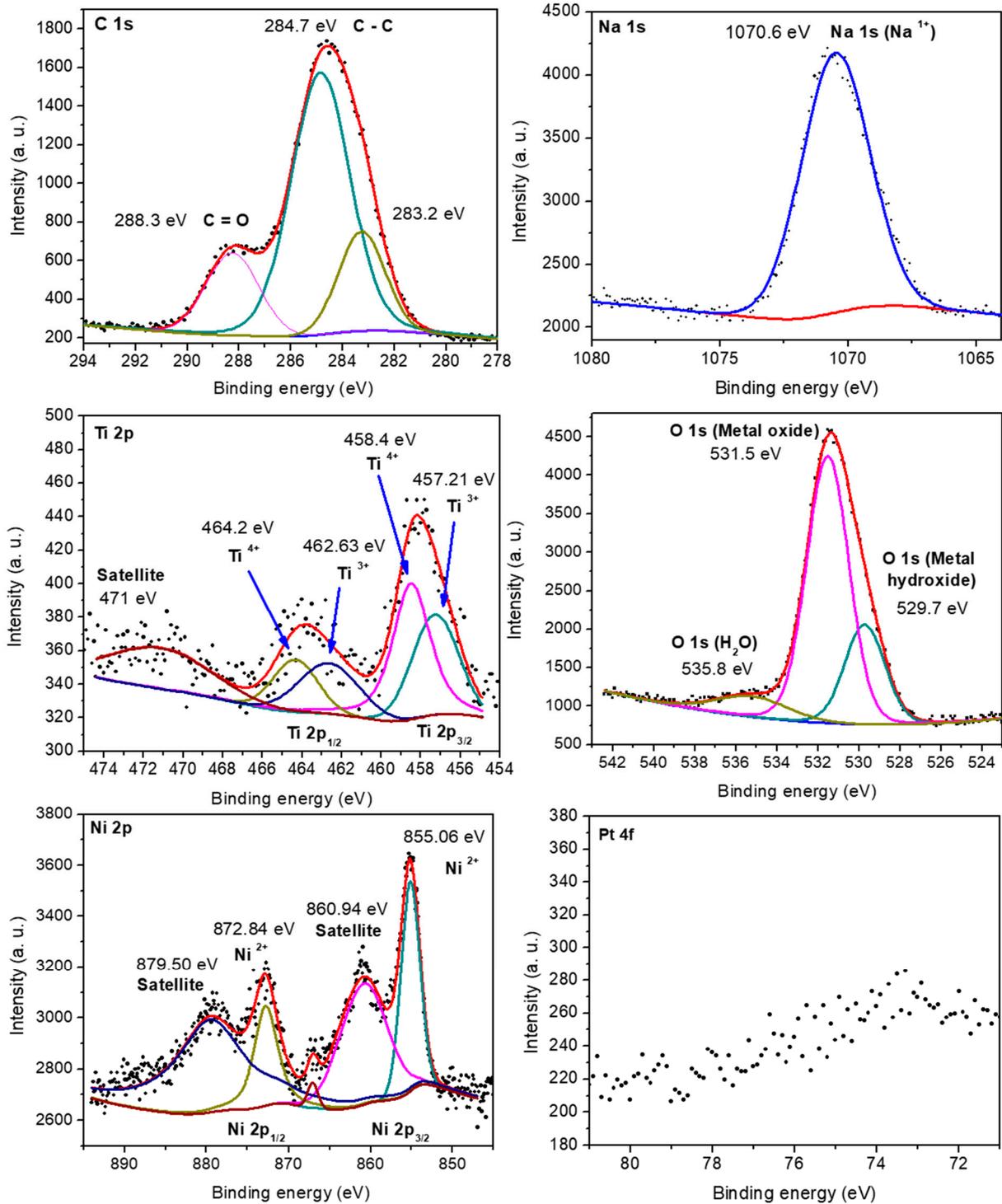
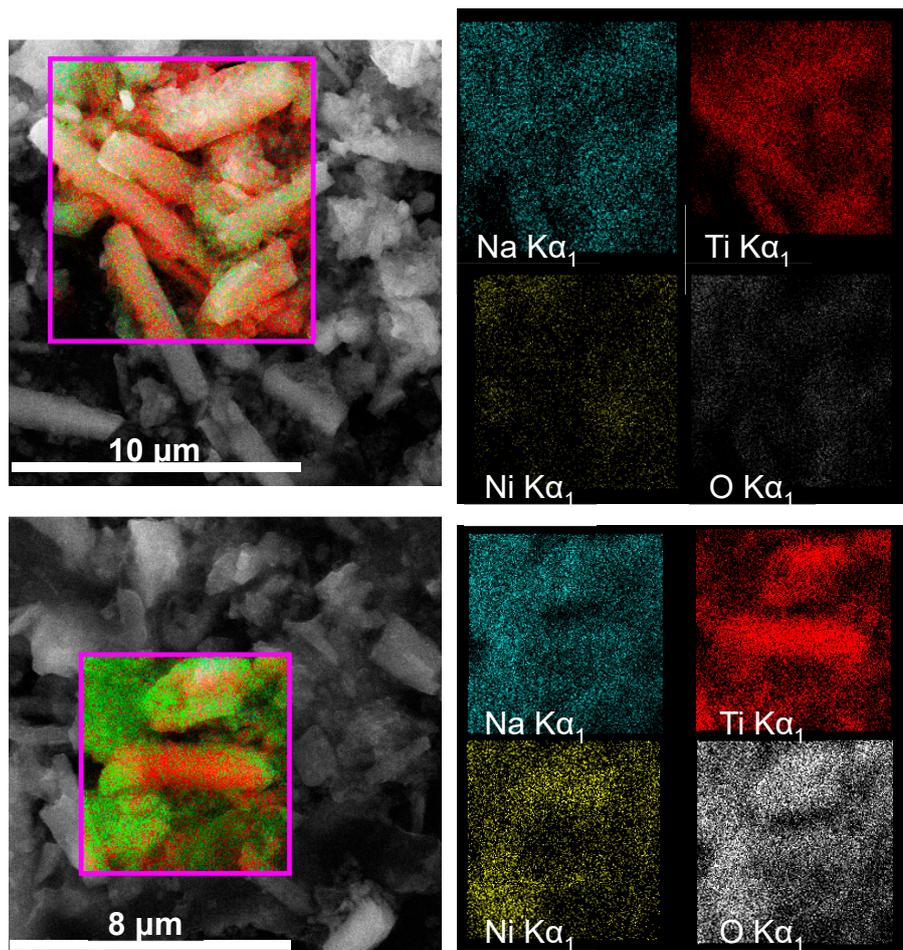


Figure S4. Time-dependent hydrogen evolution over the NTO/Pt/Ni sample.



**Figure S5.** XPS characterization of the sample with the best performance (NTO/Pt/Ni) post reaction.



**Figure S6.** EDS mapping analysis of the NTO/Pt/Ni sample after photocatalytic testing.