Interface Optimization of Fe2O3/C3N4 Heterojunction with 2

Metals Nanoparticles and their Negative and Positive

Photo- 3 electric Responses in Broadband Light Spectrum

Authors: Xingfa Ma 1,*, Caiwei Li 1, Xintao Zhang 1, Mingjun Gao 1, You Wang 2 and Guang Li

I have carefully read the article and found it cannot be accepted for publication. Several points need corrections:

1) It is difficult to read the abstract without information about the allotropic varieties of Fe2O3 and of N3C4.
2) In the introduction, line 119, is it necessary to introduce Au, Pd, Pt and Ag to speak about a Copper containing catalyst?
3) Preparation of graphitic carbon nitride and Fe2O3/C3N4 are clear. However, the conductivity measurements are performed on the powder suspended on another organic conducting polymer. PET. Is-not it possible to change of equipment and record the photoelectric signal of your powder directly? Using auto-supported wafers for instance??
4) Figures 2B and 2C cannot be accepted. A wrong signal is used for data collection and appears as negative peaks. The differences between the signal of the sample without copper and with copper will be more precisely indicated by a Figure on which the two corresponding spectra are superposed.
5) Line 243, as shown in Figure 2-A (not 4-A)
6) Line 248, why don't you use the Scherer equation to estimate the size of Fe2O3 and N3C4 particles?
7) Scheme 2 relative to N3C4, to be replaced by something equivalent for Fe2O3 N3C4 mixed materials or remove it to keep the accent on Scheme 3
8) Add a value corresponding to photocurrent response with your N3C4 initial component
9) In Figure 7, a blue curve is missing on Figure A on the second maximum for an excitation at 405 nm. Can it give information about the band-gap?
10) Avoid Au, Pd, Pt and stays on Copper in line 369
11) XPS to allow a more complet discussion, I think that the XPS spectra of N3O4 and of Fe2O3 can be given at least as supplementary information for the reader
12) In the conclusion, it is announced that the copper nanoparticles are inserted inside the C4N4/Fe2O3 heterojunctions. Without MEB images and SEM analysis, it is difficult to believe you. You have the size of Copper nanoparticles aggregates in TEM. Is that size compatible with the dimensions of your heterojunctions?