



**SDI Review Form 1.6**

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| Journal Name:            | <a href="#">International Research Journal of Pure and Applied Chemistry</a> |
| Manuscript Number:       | 2013_IRJPAC_8538                                                             |
| Title of the Manuscript: | Synthesis of NiO nanoparticles by water-in-oil microemulsion technique       |
| Type of the Article      |                                                                              |

**General guideline for Peer Review process:**

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound.

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**PART 1: Review Comments**

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|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | <p><b>Reviewer's comment</b><br/>The present work is consistent and new. The paper may probably publishable. But there are several points that should be improved. The follows are the comments.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>Author's comment</b> (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</p> <p>Thank you for the Reviewer for the time in reviewing and providing positive feedback. Latest references are used wherever applicable based on the reviewer comments.</p>                                                                                                                               |
| <p><b>Compulsory</b> REVISION comments</p> | <p>1. p.6 line 2 from the bottom "using Sherrer formula gave 12, 12 and 15 nm..."</p> <p>Which XRD peak did you used to derive the nanoparticle size? Are these values are the average value calculated using SR formula for all the peaks described in Figure 2.</p> <p>2. p.8 line 2-4 "instrumental broadening that adds to the error in nanoparticle size estimate by XRD technique"</p> <p>Normally the Sherrer equation can derive the particle size up to few nanometer. Why is the XRD instrumental limitation about the particle size determination using SR equation so bad? Did you checked the SR equation using the standard particles ?</p> | <p>1) (200) peak has the highest intensity and was used for calculating the average particle size using the Scherrer formula.</p> <p>2) Yes, the authors agree with the Reviewer that particle size determination using Scherrer equation is accurate for nanoparticles that are less than 10nm. However, for slightly large particles, defects and instrumental broadening can introduce error in the accurate determination. Prior to XRD data collection, it was calibrated using Si standard.</p> |



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|                                         | <p><b>3. General Comments</b></p> <p>I found a very similar paper about the synthesis of NiO nanoparticle using water-in-oil emulsion (Han et al., Powder Technology 147 (2004) 113-116. They investigated NiO absorption and discussed the dependence of particle size with R value, which is similar to the present work. They found the same trend with your present work that with increasing R values, the particle size increases. Please compare their results with your own. This will make your paper more interesting.</p> | <p>3) Thanks to the Reviewer. Ref. 32 in the manuscript is the article by Han et. al. that discussed about the increase in the particle size with R value.</p>                                                                                                                                                                        |
| <b><u>Minor</u></b> REVISION comments   | <p><b>1.p.5 line 2 from the bottom</b></p> <p>" TGA graph is given in Fig 1" should be in the Results section. There are no further comments on the TGA graphs in Fig 1. The TGA results should be analysed with the previous works or the reference data about the TGA pattern of NiO particles.</p> <p>2. All of the values given in Table 1 and Table 2 should be rounded in one decimal space. Significant figures should be considered in the numbers of Tables.</p>                                                            | <p>1) TGA graph allows one to determine the calcination temperature to decompose the hydroxide to oxide nanoparticle. Section 2.2 discusses on this. Ref. 32. was also cited that discusses on the calcination temperature.</p> <p>2) Based on the Reviewer suggestion, Values in Table 1 and 2 are rounded to one decimal space.</p> |
| <b><u>Optional/General</u></b> comments |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                       |