



**SDI Review Form 1.6**

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| Journal Name:            | <a href="#">British Journal of Applied Science &amp; Technology</a>                                                                                               |
| Manuscript Number:       | 2014_BJAST_9336                                                                                                                                                   |
| Title of the Manuscript: | <b>Remarkable Influence of Structures around Rhenium(V) Centers Constructed in Polyoxotungstates for Methanol Dehydrogenation under Visible Light Irradiation</b> |
| Type of the Article      | <b>Original Research Article</b>                                                                                                                                  |

**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**

|                                     | Reviewer's comment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Author's comment (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)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Compulsory</b> REVISION comments | <p>1) The paper is interesting and publishable after improvement of discussion, i.e., the mechanism of methanol dehydrogenation should be discussed.</p> <p>2) The authors reported that colour change to blue which indicated of generation of trivalent titania – this should be discussed.</p> <p>3) Why composed Titania was used? There is possible activity by rutile phase even at 420 nm. Of course, the authors showed reference data for Titania, and thus visible light activity caused by rutile phase could be excluded. However, they should comment why this kind of Titania was used.</p> | <p>1) &amp;2) the colour change to blue might be due to a generation of trivalent titanic and/or formation of heteropolybule. We observed DR/UV-vis spectra of the samples after photoreactions; however, clear bands due to the trivalent titanic and/or heteropolybule were not observed because these bands were hidden by the bands of rhenium (V) compounds. The oxidation states of rhenium sites in polyoxoanions <b>1 - 3</b> during the light irradiation are also unclear. The studies on the mechanism are in progress, and they will be reported elsewhere.</p> <p>3) As you know, various types of TiO<sub>2</sub>, e.g., pure anatase TiO<sub>2</sub> and composed TiO<sub>2</sub> were used as photocatalysts, and they showed different photocatalytic activities as reported by B. Ohtani [16]. In this study, we used the composed TiO<sub>2</sub> obtained from Wako because it was pure (the purity was 99.9%) and easily available for us. We confirmed repeatability of the photocatalytic activates with several times.</p> |
| <b>Minor</b> REVISION comments      | <p>1) Can the authors give the commercial name of Titania which they used? There is only information about supplier.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>We added the details of TiO<sub>2</sub> as follows: "TiO<sub>2</sub> (anatase/rutile = 80/20; 99.9%; -5 μm) was obtained from Wako Pure Chemical Industries, Ltd." (line 81)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Optional/General</b> comments    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |