



SDI Review Form 1.6

Journal Name:	British Journal of Applied Science & Technology
Manuscript Number:	2014_BJAST_9336
Title of the Manuscript:	Remarkable Influence of Structures around Rhenium(V) Centers Constructed in Polyoxotungstates for Methanol Dehydrogenation under Visible Light Irradiation
Type of the Article	Original Research 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

	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)
<u>Compulsory</u> REVISION comments		
<u>Minor</u> REVISION comments	This paper describes an interesting piece of work on the synthesis and use of a rhenium polyoxometalate (POM). The POM is well-characterized, even if ^{183}W solution NMR could be added, allowing a supplementary proof of the structure. The main comment is on the catalysis part. As pointed out by the authors there is an induction period for compounds 1 and 3 but no induction period for compound 2. It seems then that a dinuclear Re species is needed. The authors argue that the complexes do not evolve during photo catalysis as the ^{31}P NMR spectra are the same before and after reaction. However they should also analyse the solid and determine what amount of POM remains in the solution. Very probably the active catalyst is not $\text{TiO}_2 + \text{POM}$ in solution but a solid containing POM on TiO_2. This point should be clarified before publication in BJAST.	1. We added the sentence as follows: "The ^{183}W NMR spectrum of Me₂NH₂-1 was failed to obtain because of the low solubility in water and acetonitrile." (line 235) 2. We added the sentence as follows: "When a suspension of K-2 (50 mg) and TiO_2 (200 mg) in methanol (25 mL) was irradiated under visible light (≥ 400 nm) for 6 h, followed by filtration through a membrane filter (JG 0,2 mm), UV-vis spectrum of the filtrate showed a small band at around 220 nm due to a charge transfer band of $\text{W}^{\text{VI}}\text{-O}$; however, this was significantly smaller than that in 30 mM EDTA-2Na aqueous solution (25 mL) under the same reaction conditions, as shown in Figure 5. Even when the cesium salts of 1 – 3 were used as catalysts, a slight leaching into methanol was observed. These results suggested that the rhenium(V) compounds were predominantly active in the solid state under the present reaction conditions." (line 278) We also added Figure 5.
<u>Optional/General</u> comments		