Appendix 1

Students' English Proficiency and Perceptions of CLIL Lessons

Instructions: Please indicate your level of agreement with the following statements regarding your English language competence. Please answer according to your personal beliefs and learning experiences. You may put (✓) in the box for your answer.

1 = never or almost never true of me
2 = usually not true of me
3 = somewhat true of me
4 = usually true of me
5 = always or almost always true of me

Items	Level				
	1	2	3	4	5
In general, I can listen, speak, read and write in English effectively.					
I can listen and understand key information in English.					
I can speak English fluently and confidently.					
I can read and understand texts in English effectively.					
I can write grammatically correct sentences in English.					
I can read and understand research articles written in English.					
I can use academic vocabulary appropriately.					
I have knowledge of rhetorical structure in academic articles written in English.					
I can read and understand research abstracts written in English.					
I can write research abstracts that meet international standards in English.					

Appendix 2

CLIL Instructional Materials for the Abstract

Sample sentences corresponding to moves (text segments)

Background

5 hydroxylmethylfurfural (HMF) *is* a bio based chemical that can be prepared from natural abundant glucose by using combined Brønsted–Lewis acid catalysts

Purpose

In this work, Al3+ catalytic site *has been grafted* on Brønsted metal–organic frameworks (MOFs) to enhance Brønsted–Lewis acidity of MOF catalysts for a one pot glucose to HMF transformation.

Methods

The initial stage of glycerol conversion over H-ZSM-5 zeolite has been investigated *using density functional theory (DFT) calculations on an embedded cluster model consisting of 128 tetrahedrally coordinated atoms*.

Results

The *results* confirm that the method that takes weak interactions, especially the van der Waals interaction, into account is essential for describing the confinement effect from the zeolite framework. The effects of the infinite zeolitic framework on the cluster model are also included by a set of point charges generated by the embedded ONIOM model. The energies for the adsorption of ethene, benzene, ethylbenzene, and pyridine on H-ZSM-5 from an embedded ONIOM(MP2:M06-2X) calculation are predicted to be -14.0, -19.8, -24.7, and -48.4 kcal/mol, respectively, which are very close to available *experimental observations*.

Discussion

The confinement effect of the extended zeolite framework *has been clearly demonstrated* not only to stabilize the adsorption complexes but also to improve their corresponding activation energies to approach the experimental benchmark

Grammatical features :present tense, past tense, present perfect tense
Lexical features – nouns: challenge, significance, importance, potential, research, interest, effect, technique, observation, framework, model, method, finding
Lexical features - verbs: become, increase, graft, observe, analyse, investigate, demonstrate
Lexical features - adjectives :significant, important, crucial, major, great

A Sample Activity of the Abstract

A large proportion of the world's population lives in remote rural areas that are geographically isolated and sparsely populated. The present study is based on modeling, computer simulation and optimization of hybrid power generation system in the rural area in Muqdadiyah district of Diyala state, Iraq. Two renewable resources, namely, solar photovoltaic (PV) and wind turbine (WT) are considered. The HOMER software is used to study and design the proposed hybrid energy system model. Based on simulation results, it has been found that renewable energy sources perhaps replace the conventional energy sources and would be a feasible solution for the generation of electric power at remote locations with a reasonable investment. The hybrid power system solution to electrify the selected area resulted in a least-cost combination of the hybrid power system that can meet the demand in a dependable manner at a cost about $0.321/kWh. If the wind resources in the study area at the lower stage, it's not economically viable for a wind turbine to generate the electricity.

Move type identification task

Direction: Read the following abstract and identify the function of each text segment as B= Background, P = Purpose, M = Methods, R = Results, or D = Discussion. Write your answer in the space provides.

Adapted from: Hassan, Q. et al. (2016). Optimization of PV/WIND/DIESEL hybrid power system in HOMER for rural electrificat on. *Journal of Physics, 745*, 1-8.

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