PRELIMINARY DRAFT OF DOCTORAL THESIS

(TEMPLATE TO FOLLOW)

Name and surname of the candidate:
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Project title :

Bioenergy/Biofuel and Green Hydrogen Technology

1. Project background

The current economy is based on fossil fuels which will eventually run out and whose consumption is the source of greenhouse gas emissions [1]. For several decades now, an energy transition towards alternative energy resources, less polluting and more respectful of the environment, has been underway [2]. Thus, green hydrogen, which is an energy vector, is seen as a good alternative [3].

2. Project objectives

2.1. Main objective

The main objective of this project is to product green or renewable hydrogen from the electrolysis of water or from biomass/bioenergy (biohydrogen). The bioproduction of hydrogen, the most recent among the techniques for producing green hydrogen, seems very promising thanks to the mild operating conditions with acceptable conversion rates.

2.2. Specific objectives

To be economically viable, biohydrogen production technology must allow industrial production of hydrogen. Also, it is essential to conduct increasingly in-depth research with the aim to improve rate of biohydrogen synthesis processes.
It is within this framework that two PhD study scholarships are offered at the University of Rostock in Germany.

3. Project scope

This programme is in English. Four months English language course will be offered to selected candidates in the Centre International de Langue de Lomé at the Université de Lomé. At the end of this English language course, students will have to pass an English language proficiency test prior to the registration.

4. Methodology and approach

As climate change management strategies (adaptation and mitigation) will become an integrated, interdisciplinary and multi-sector approach, the Doctorate Programme in Energy and Green Hydrogen has been designed to prepare the next generation to meeting the energy challenges of adaptation and resilience to climate change in West Africa.

5. Programme deliverables and schedule (Complete Table 1)

The mission of this Doctorate's programme is to provide state-of-the-art training in cutting-edge tools used in renewable energy, green hydrogen technology and policy (political and economic) with a view to training adequate human resources to invigorate the energy technology sector and guide energy policy formulations throughout the West African region.

Table 1 : Programme schedule

Study year	Year 1												Year 2												Year 3											
Task 1																																				
Task 2																																				
*Task i																																				

*Insert activity as needed

6. References

[1] Timothy E. Lipman Adam Z. Weber 2019; Fuel Cells and Hydrogen Production, Springer, 1182p

[2] V. Subramani, A. Basile and T. N. Veziroglu, 2015; Compendium of Hydrogen Energy, Volume 1 : Hydrogen Production and Purification, Elsevier, 551p

[3] Z. Fang, R. L. Smith, Jr. X. Qi 2015; Production of Hydrogen from Renewable Resources, 1st ed. 2015 Edition by Zhen Fang (Editor), Richard L. Smith Jr. (Editor), Xinhua Qi (Editor), Springer, 375p