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Antananarivo, October 17<sup>th</sup>, 2018

## **MOTIVATION LETTER**

Having a MASTER II degree in Chemistry of Water and Environment, I completed my university studies at the University of Antananarivo. During this time, my research was focused on the characterization of the quality of wastewater especially those resulting from industries, the analysis of parameters indicating pollution, the different types of treatment to adopt. After having followed various trainings, I was able to have experiences on the rehabilitation of the polluted sites, the study of the vulnerability of ground water, study and valorization of the waste resulting from biomass, theoretical and practical experiments in the field of the chemistry analytical on gas chromatography, modeling, statistics.

To broaden my knowledge and my experiences, I also followed trainings on the Geographical Information System and remote sensing, the development of manual quality and application of the ISO 17025 standard in the laboratory, I also worked in the field of the environmental impact study, the inventory and physicochemical study of algae from Madagascar.

As a result of these experiences, I am currently working as a researcher in the water analysis section of the Environment and Quality of Life Department at the National Center for Environmental Research, which is under the supervision of the Ministry of Higher Education and Training. Scientific Research. At the moment, I am working with our team to research the measurement of the concentration rate of heavy metals in urban agricultural soils of the city of Antananarivo, the physicochemical study of the soil and especially the treatment to be applied. This requires the use of new methods of analysis such as statistics, spatial modeling to make a decision on the treatment to be applied.

More over, being in the field of research, manipulation and knowledge of programs and statistical tools are essential for the realization of studies and also to have reliable results.

Through these experiences and needs, I would like to be part of the team and to take this training.

You find enclose, my curriculum vitae (CV) including my contacts. I'm at your disposition for a future exchange and for further informations.

Sincerely yours.

## **RESEARCH PROJECT ABSTRACT**

### **Title of the project : Spatial modeling of agricultural soil quality in Antananarivo and biological decontamination test**

Urban agriculture has grown significantly in recent years. This is strongly due to the rapid increase in population, it is a phenomenon of great magnitude because it generates many active practitioners. Unfortunately, agricultural soils are contaminated directly by input inputs (pesticides, fertilizers) but also indirectly because of the proximity of certain industrial facilities. The objective of this study is to evaluate the quality of agricultural soils in Antananarivo and to develop biological decontamination techniques. The soil quality assessment will be based on the analysis of the physicochemical parameters and especially on the measurements of the concentrations of heavy metals in order to be able to know the degree of contamination allowing to apply the technique of decontamination based on the use of microorganism and plant. The expected results of this project make it possible to know the effectiveness of the treatment and to apply it on a large scale.

All of the tests described are performed in triplicate, the data will be processed statistically with appropriate software with the analysis of variance from a multifactorial device in randomization allowing a comparison of averages and the distribution of point clouds for each correlation will be checked on a graph.

**KEY WORDS:** agricultural soils, heavy metals, microorganisms, plants, Antananarivo city.

## **CURRICULUM VITAE**

RABENIRINA Harilanto Miarantsoa

### **Details**

Birth date : 23 January 1992

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E-mail: miari\_lanto@yahoo.fr

Business address : BP 1739, 39, rue Rasamimanana, Fiadanana, Antananarivo, Madagascar

**Fields of competence** : Mineral chemistry, environmental chemistry, environmental pollution

### **Education and training**

**2013-2015** : Faculty of Sciences, University of Antananarivo, Madagascar

Master II in water and environment engineering

**2012-2013** : Faculty of Sciences, University of Antananarivo, Madagascar

Master's degree in Mineral Chemistry

**2011-2012** : Faculty of Sciences, University of Antananarivo, Madagascar

Certificate of Achievement in the First Year of the Second Cycle in Chemistry

**2011-2010** : Faculty of Sciences, University of Antananarivo, Madagascar

University Diploma of Scientific Study II (DUES)

**2008-2009** : High school at Jean Joseph Rabearivelo, Antananarivo, Madagascar

Scientific baccalaureate

### **Work experience**

**April 2016 - present** : Research assistant at CNRE in the quality of life and environment departement. In charge of the analysis of the nutrients in the water as well as the realization of the intercalibration in the laboratory of water

**October – January 2016** : Internship at Unité de Recherche en Génies des Procédés et en Génie de l'Environnement (URGPGE)

**April – September 2015** : Research internship at Centre National de Recherches sur l'Environnement (CNRE)

**2014** : - Internship at Wold Wild Fund (WWF)

- Practical training instructor in mineral chemistry at the faculty of sciences, university of Antananarivo

### **Training course**

**February 2018** : Training in geographical information system (QGIS, OpenStreetMap).

**July 2018** : Development of quality manual and application to the ISO 17025 in laboratory.

### **Professionnal presentation**

Andriambeloson, O., **Rabenirina, H.**, Rajoelisoa, A., Ramaroson, L., Rasolomampianina, R. 2017. Purifying Potential of *Streptomyces albidoflavus* Strain DSM 40455T and *Streptomyces antibioticus* Strain NBRC 12838T in Wastewater Treatment. 5. 117-124

**Languages :**

Languages	Reading	Writing	Speaking
French	Excellent	Excellent	Excellent
English	Good	Good	Good

**Others knowledges :**

- Bureautics, Internet
- OHSAS 18001
- Norms : ISO 9001, ISO 14001
- Microbiology

**Hobbies**

Reading, Basketball, board games