JEFFREY PAULO H. PEREZ

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EDUCATION

PhD Geology, Free University of Berlin, Germany

- *October 2016 - present*
- **Specialization**: Environmental Geochemistry

MSc. Environmental Sanitation, Ghent University, Belgium

- *Summa cum laude, September 2016*
- **Dissertation**: "Iron oxide nanoparticles in Covalent Organic Frameworks: New hybrid adsorbents for metal sequestration"

BSc. Chemical Engineering, University of the Philippines Los Baños, Philippines

- *Cum laude*, *April 2012*
- **Thesis:** "Parametric and optimization studies on two-stage acid hydrolysis of cogon grass (*Imperata cylindrica*) for xylose production"

RESEARCH EXPERIENCE

Helmholtz Center Potsdam - GFZ German Research Center for Geosciences, Germany
Section 4.4 Interface Geochemistry (http://www.gfz-potsdam.de/en/section/interface-geochemistry/)
Marie Curie PhD Fellow, October 2016 - Present
European Horizon 2020 Marie Sklodowska Curie Initial Training Network (ITN): Metal-Aid - Metal oxide-aided subsurface remediation: From invention to injection (http://nanogeoscience.dk/metalaid/)
PhD Supervisor: Prof. Dr. Liane G. Benning

- Ongoing Research Project: "Kinetics, and rates of redox activity and transformation of Green Rust (GR) reactants"

Ghent University, Belgium
Laboratory of Analytical Chemistry and Applied Ecochemistry (ECOCHEM), Department of Applied Analytical and Physical Chemistry (www.ugent.be/bw/tafc/en/research-groups/ecochem)
Center for Ordered Materials, Organometallics and Catalysis (COMOC), Department of Inorganic and Physical Chemistry (www.comoc.ugent.be)
Master's Thesis Student, September 2015 - July 2016
Promotors: Prof. dr. ir. Gijs Du Laing, Prof. dr. Pascal Van Der Voort

- Developed novel functionalized nanoporous adsorbents, and examined their performance in the removal of heavy metals and the recovery of critical and precious metals in (waste)water.
- Techniques used include organic and inorganic chemical synthesis, glovebox and Schlenk techniques, NMR spectroscopy, elemental analysis, nitrogen sorption, XRPD, IR and Raman spectroscopy, ^{57}Fe Mössbauer spectroscopy, TEM (HRTEM, HAADF-STEM, EDX, STEM-EELS), ICP-MS, ICP-OES.

University of Cuenca, Ecuador
In cooperation with ETAPA Ucubamba Wastewater Treatment Plant (www.etapa.net.ec/Productos-y-servicios/Saneamiento/Plantas-de-Tratamiento-de-Aguas-Residuales-Ucubamba), and funded by the VLIR Network Ecuador
Engineering Intern, July 2015

- Monitoring and performance evaluation of sludge treatment operations
- Improvement of the dewaterability of thickened sludge by optimizing conditioning parameters

University of the Philippines Los Baños, Laguna, Philippines
Department of Engineering Science; Department of Chemical Engineering
"Extraction and characterization of nanocrystalline cellulose from corn cobs"
Study Leader, April 2013 - September 2014

- Optimized nanocrystalline cellulose extraction from corn cobs using acid hydrolysis coupled with ultrasonication, and characterized and evaluated its crystallinity and morphological and functional properties for biodegradable plastic composite applications
- Techniques used include XRD, SEM

SPECIALIZATION

Environmental science and engineering, (Bio)Chemical engineering, Environmental (geo)chemistry, Materials science

RESEARCH INTERESTS

Nanomaterials for environmental remediation, Nanoporous materials (MOFs, COFs), Material synthesis and characterization, Design and optimization of chemical processes, By-product utilization for biomaterial synthesis

PROCEEDINGS

J.P.H. Perez, B.G. Bataller, E.P. Lacida, J.L.M. Quiminiano, R.O.M. Tamani, F.G.B. Villegas. "Parameter optimization of two-stage acid hydrolysis of common Philippine perennial grasses and agricultural wastes for xylitol production". 74th Philippine Institute of Chemical Engineers (PIChE) National Convention, Albay, Philippines, 2013.

PROFESSIONAL EXPERIENCE

University of the Philippines Los Baños, Laguna, Philippines
Department of Engineering Science
Instructor, July 2012 – July 2014

- Taught introductory engineering courses such as engineering mechanics, differential equations, engineering graphics and programming (Class size: 30-40 students)

Licensed Professional Chemical Engineer (Passed November 2012, PRC Number: 028793)
Philippine Professional Regulatory Commission (PRC) Chemical Engineering Licensure Examination

ACADEMIC AWARDS AND SCHOLARSHIP

- Marie Curie Research Fellowship, European Horizon 2020 Marie Sklodowska Curie Initial Training Network (MSCA-ITN): Metal-Aid (2016)
- 2nd Place, Water Technology Thesis Award, TNAV Flemish Water Technology Network (2016)
- ArcelorMittal Indaver Environmental Thesis Award, Ghent University (2016)
- VLIR-UOS (Flemish Government) International Course Programme Scholarship Award (2014)
- University President's Medal of Excellence, University of the Philippines (2012)
- Medal of Academic Excellence in Engineering, University of the Philippines (2012)
- Medal of Academic Excellence in Science, University of the Philippines (2012)
- Most Outstanding Student Leader in Engineering, University of the Philippines (2012)
- 3rd Place (Team Captain), Philippine National Chemical Engineering Quiz (2011)
- DOST Science and Technology Scholarship Award (2007)

SKILLS AND EXPERTISE

- Teaching (engineering sciences and review classes for university entrance exams)
- Laboratory and analytical skills: organic and inorganic synthesis, glovebox and Schlenk techniques, nitrogen sorption, XRPD, IR and Raman spectroscopy, elemental analysis, ICP-MS, ICP-OES
- Mathematical/statistical modelling, Water quality modelling, Response surface analysis
- Statistical analysis, modelling and programming: SigmaPlot, Origin, R, Weka, Design Expert, Visual Basic, C/C++
- Language skills: Filipino (native), English (*bilingual* proficient)

AFFILIATIONS

- European Association of Geochemistry
- Royal Society of Chemistry
- Philippine Institute of Chemical Engineers