



Education

- **Polytechnique Montreal, Montreal, QC, Canada** (2018)

Ph. D. Degree, Department of Chemical Engineering

Thesis: "Polystyrene Depolymerization Using Microwave Pyrolysis"

- **Polytechnique Montreal, Montreal, QC, Canada** (2012)

B. Ing. Degree, Department of Chemical Engineering

Research Interests

- Chemical Reaction Engineering;
- Process Design, Development and Optimization;
- Microwave Heating;
- Conventional and Microwave Pyrolysis;
- Fixed-Bed and Rotating Reactors;
- Development of Renewable Energy Resources (Post-consumer Plastics and Valorization);
- Development of Sustainable Processes;
- Process Heat Integration.

Expertise

- Process development in lab: experimental and modeling;
- Chemical reaction engineering;
- Microwave engineering;
- Process operation and troubleshooting;
- Experimental design and statistical analysis;
- Chemical processes simulation with ASPEN and HYSYS;
- Utilization of Induction heating in extremely high temperature reactors;
- Characterization and measurement techniques such as:
 - GC-MS, GC-FID, GC-TCD, CHNS/O Elemental Analyzer, Oxygen Bomb Calorimeter, Automatic distillation, Karl-Fischer Titrator, Potentiometric Titrator, Flash Point Tester, Thermogravimetric analysis (TGA).



**POLYTECHNIQUE
MONTRÉAL**

**LE GÉNIE
EN PREMIÈRE CLASSE**

Philippe Leclerc, Jr. Eng., Ph. D.

• Montreal, Quebec
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Research Background

- Development of a microwave thermogravimetric analyzer for kinetic studies;
- Development of a catalytic fixed bed for pyrolysis gases treatment;
- Kinetic study of polystyrene microwave pyrolysis;
- *In-situ and ex-situ* catalysts evaluation on polystyrene microwave pyrolysis products;
- Modelling of microwave heating during pyrolysis;

Teaching Experience

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| • Process analysis and sustainable development,
Polytechnique Montreal, Montreal, QC, Canada | Lecturer | Winter 2018 |
| • Elements of Chemical Reaction Engineering,
Polytechnique Montreal, Montreal, QC, Canada | Lecturer | Summer
2017-2018 |
| • Elements of Chemical Reaction Engineering,
Polytechnique Montreal, Montreal, QC, Canada | Teaching
Assistant | Summer & Fall
2013-2016 |
| • Chemical Engineering Project I & II,
Polytechnique Montreal, Montreal, QC, Canada | Teaching
Assistant | Winter
2015 & 2017 |
| • Brewing Engineering,
Polytechnique Montreal, Montreal, QC, Canada | Lecturer
(one class) | Winter
2014-now |
| • Organic chemistry,
Polytechnique Montreal, Montreal, QC, Canada | Laboratory
Assistant | Winter
2011 - 2014 |