

# POST-DOCTORAL POSITION

## Position

Post-Doctoral Position within the Department of Chemical Engineering & Applied Chemistry, University of Toronto

## Topic

Field of Research – Cleantech - Area of Smart Sensors for Intensive Combustion Processes based on novel applications of applied spectroscopy and other techniques for measurement of gas constituents, gas temperatures, and gas flows.

## Research

The strategy is aimed at identifying the best and most cost effective analytical solutions for a reliable, low maintenance, easy installation, infrequent and simple calibration, and precise and robust analysis of a complete spectrum of combustible gas constituents. CO, CO<sub>2</sub>, O<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>, H<sub>2</sub>O, SO<sub>x</sub>, NO<sub>x</sub>, gas flows and gas temperatures.

Specifically, an in-situ gas quantification is needed for a more robust and reliable process control and better understanding of the combustion mechanism. The goal of the research is to develop and evaluate robust and reliable smart sensors which can be used for real-time measurements and on-line process control optimization in an extremely harsh (hot and dusty) environment. The research will focus on the innovative application of state-of-the-art applied spectroscopy for intensive combustion processes.

This Post-Doctoral candidate will work in close collaboration with the technology team of Tenova Goodfellow Inc., to develop a strategic technology roadmap for the research program in smart sensors. The first activity will be to complete an application for a Collaborative Research Development program to provide long term funding for a Cleantech research team at the University of Toronto. The Post-Doctoral position is available immediately at the Department of Chemical Engineering & Applied Chemistry at the University of Toronto for a 12 month term (with a possible extension of one or more years).

## Qualifications

The candidate must have a Ph.D. with a strong R&D development background in Applied Spectroscopy with experience or a strong interest in the application of spectroscopy for industrial processes. The candidate should if possible have experience in process engineering and combustion related fields, data mining and model development. Using your excellent organizational and communication skills you will demonstrate the ability to lead a research and development team.

## Contact

Candidates should send their qualifications to:

Mary Kneebone

Coordinator

Email: [mary.kneebone@ca.tenovagroup.com](mailto:mary.kneebone@ca.tenovagroup.com)