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PhD Position Available –
Multiscale Simulations of Multiphase Flows

The Position

Dr. Alexandra Komrakova of the Mechanical Engineering Department at the University of Alberta invites applications and queries for a PhD position in the area of **Numerical Modelling of Multiphase Flows**. This position is open to candidates who possess relevant degrees in Mechanical and Chemical Engineering. Applicants with expertise and experience in numerical modelling (direct numerical simulations, computational fluid dynamics, or population balance equation), programming, experimental or numerical studies of emulsions, dispersions and reactive systems are highly encouraged to apply. Previous experience with machine learning is desirable but not required. The successful candidate must communicate well in English. This position is available to Canadian citizens, permanent residents of Canada, and international applicants. It is expected that the successful candidate will take up the position no later than Spring 2020. The successful candidate will have opportunities to participate in national and international conferences, and collaborate with academic and industrial experts.

The Project

This project is a part of a bigger program of UK/Canada collaboration "Enhancing industrial liquid processing through intelligent pipeline mixing". The project is focused on in-depth study of in-line mixing by means of experimental measurements and numerical simulations coupled with artificial intelligence and machine learning. The proposed research project seeks to develop numerical frameworks to simulate complex liquid-liquid dispersions and reactive systems. The framework will be built based on several techniques such as direct numerical simulations using a lattice Boltzmann method, population balance equation modelling as well as machine learning procedures. The experimental support will be available to cross-validate the developed models.

Application Procedure

Candidates are asked to submit complete applications, which include: i) a cover letter; ii) a detailed curriculum vitae highlighting career achievements, areas of research, a list of publications, awards and honors, and a list of three professional references; iii) undergraduate and graduate degree transcripts.

Interested candidates should send their completed application packages and direct queries to **Dr. Alexandra Komrakova** by email at **komrakov@ualberta.ca**. The position will remain open until filled.