

# Development of Accurate Two-Phase Flow Models for Simulating Steam Injection in SAGD Applications

## PROJECT DESCRIPTION

In steam-assisted gravity drainage (SAGD), steam is injected into reservoir, transferring heat into reservoir and aiding in the recovery of heavy oil. One issue related to this process is how to distribute the steam into the reservoir based on the actual needs. Inflow control devices are frequently used for such purpose. But how to accurately the two-phase flow downhole is challenging as the steam can be come condensed under bottomhole conditions, forming two phase flow downhole instead of single phase flow. This research will look into how to model the two phase flow in a SAGD well accurately and then use such model to optimize the steam injection to achieve a better oil recovery efficiency.

## FACULTY-DEPARTMENT

Engineering - Civil and Environmental

## OPEN TO STUDENTS FROM THE FOLLOWING INSTITUTIONS

Chinese universities participating in the [\*Double First-Class Initiative\*](#).

## DESIRED FIELD OF STUDENT STUDY

Students with a degree related to petroleum engineering and fluid mechanics are preferred.

## INTERNSHIP LOCATION

Edmonton Campus

## NUMBER OF INTERNSHIP POSITIONS

2

## INTERNSHIP DATES

Start: July 2, 2019

End: October 2, 2019

## ARE THE DATES FLEXIBLE?

Yes, I am flexible regarding the internship dates. Selected students can contact me to request a date change.