

## Project proposal

Project title	<input type="text" value="Compartment Fire Suppression Capabilities of Gaslike Micromist"/>	
First Supervisor	Dr <input type="text" value=""/>	<input type="text" value="Siaka Dembele"/>
Second Supervisor	<input type="text" value="tbc"/>	
School	<input type="text" value="Mechanical and Automotive Engineering"/>	
Other member of supervisory team (no more than three KU supervisors in total)	<input type="text"/>	
Specific requirements beyond 2:1 degree	<input type="text"/>	

### Project summary (max 4,000 characters)

#### MSc by Research

Water spray and sprinkler systems are widely used in fire protection but have their own limitations. Recently, there has been a worldwide interest in gas-like micromist water systems (droplet diameter below 20 microns) for fire suppression. This is mainly because unlike sprinklers, micromists could reach flames hidden by obstacles, use less water and are less damaging to equipments. Micromists generated by ultrasonic techniques are currently tested in the USA. Micromist generated by flashing of superheated water is a cost effective option but its compartment fire suppression capabilities have not been investigated.

The proposed MSc project aims to bridge the knowledge gap on compartment firesuppression capabilities of gas-like Micromist generated by flashing superheated water through both experimental and theoretical studies.

The key objectives of the study are:

- To conduct an extensive experimental study on the micromist fire suppression capabilities. The tests will be conducted in a recently built reduced-scale fire testing compartment which is a 2/5 replica of the ISO 9705 room.
- To advance gas-like mist modelling and implement developed models in a Large Eddy-Simulation CFD code for micromist/fire interaction study; and
- To make recommendations on the fire suppression capability and viability of flashing micromist