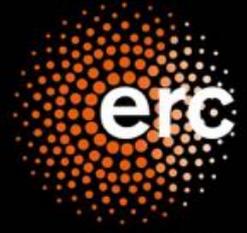




# Open PhD positions

## Project LUBFLOW: Lubricant-infused surfaces in flows



### The project

LUBFLOW is funded by the European Research Council (ERC) and will take place at the School of Engineering Sciences, KTH Stockholm. The objective of LUBFLOW is to develop a fundamental understanding of lubricant-infused surfaces in fluid flows, which could have significant implications for various technological applications.

A lubricant-infused surface (LIS) is a structured surface infused with a viscous liquid layer. These slippery surfaces are partially inspired by the carnivorous *Nepenthes* pitcher plant. LISs have shown great promise for reducing fluid friction, preventing biofouling and increasing heat transfer in fluid flows. However, the behaviour of LISs in realistic flow environments is very difficult to predict. LUBFLOW will therefore investigate LISs in fluid flows that include turbulence, surfactants, and bacteria. This could lead to better control of fluid flows and broad technological advancements.

### Your profile

Depending on your background and interests, you can work on either experimental or computational fluid mechanics combined with chemistry, biology, or materials science. LUBFLOW tasks focus on understanding different aspects of lubricant-infused surfaces:

- Interfacial phenomena of surfaces in laminar or turbulent flows
- Effects of surface tension variations caused by surfactants and thermocapillary
- Bacterial biofilms on interfaces in flows
- Efficient numerical solutions for interfacial turbulent flows

As a PhD student, you will have the opportunity to contribute to one or more of these topics based on your skills and interests. Experience in experimental or computational fluid mechanics is a considerable merit. Experience with microfabrication techniques, surface chemistry and bacteria are also valuable.

### Our offer

- A dynamic and international research environment ([www.flow.kth.se](http://www.flow.kth.se))
- A workplace with many benefits and very competitive salary
- Help to relocate and be settled in Sweden and at KTH.
- Collaboration with some of the best research groups worldwide in the field
- State-of-the-art computational and experimental facilities

### Your application

Please apply **online** at the [KTH's recruiting system](#).

Your application should contain a letter, CV, copy of your diplomas and grades and a representative publication or report that you have written.

Deadline for applications: 2nd May 2023

Start date: September 2023 or later

Contact: Prof. Shervin Bagheri ([shervin@mech.kth.se](mailto:shervin@mech.kth.se))

Project website [www.bagherigroup.com/lubflow](http://www.bagherigroup.com/lubflow)

