

Research Grants for PhD students from the China Scholarship Council

Information Form (please read the guidelines carefully on the website www-csc.utt.fr)

Supervisor's name : Given names :

Status (prof., assistant prof., ...):

Laboratory :	UMR CORIA 6014	Website address :	https://www.coria.fr
Institution :	INSA ROUEN NORMANDIE	Website address :	http://insa-rouen.fr/

Scientific competence of the supervisor:

Our research group is dedicated to the development of theoretical and computational modeling and control strategies for complex fluid flows, encompassing laminar, turbulent, and transitional regimes. Our primary focus lies in the development of computer modeling, simulations, and algorithms, specifically applied to investigating the topology of flow structures in complex media. This includes single and multi-phase flows, with or without heat transfer, as well as energetic systems.

Two major publications in the field proposed for the PhD :

1.
2.

Website address of the personal page :

Supervisor's email :

Description of the research work proposed for a PhD

Topic # (see list) :

Title :

Subject :

This Ph.D. program delves into the complex dynamics of vortex generators (VGs) and their role in enhancing heat transfer within turbulent chaotic flow environments. Through a combination of theoretical analysis and numerical simulations, researchers aim to uncover the fundamental mechanisms governing VG-induced flow dynamics and heat transfer enhancement. Past research has extensively explored computational modeling of vortical structures. Examples include investigating laminar vortex ring evolution and wake structures of micro-ramp vortex generators in bounded flows. Various longitudinal RVG designs have been studied to enhance heat transfer and reduce pumping energy.

The current study focuses on optimizing VG configurations to maximize heat transfer efficiency while minimizing energy consumption. Additionally, model validation and assessment will be conducted to corroborate theoretical and numerical findings. Overall, this study enhances understanding of mass transfer enhancement in mixing fluid flows, offering insights into active and passive methodologies for optimizing energetic processes.

To support this research program, we are looking for an outstanding and highly motivated candidate to pursue his PhD within our group.

Keywords :

Expected collaborations :

Background required from the applicant :

Existence of a PDF file detailing the proposal ("yes" or "no") :