Information Form (please read the guidelines carefully on the website www-csc.utt.fr)	
Supervisor's name : Abboudi Gi	iven names : Said
Status (prof., assistant prof.,) : Prof.	
Laboratory : Laboratore Interdisciplinaire Carnot de	Website address :
Bourgogne, UMR 6303 CNRS, ICB-COMM	http://icb-comm.utbm.fr/
Institution : UTPM	Website address :
OTRM	www.utbm.fr
Scientific competence of the supervisor: Computational fluid dynamic	
Direct and inverse heat transfer problems	
 Finite, volume, difference and element methods and numer 	ical implementation
Heat exchanger	
Thermal and Thermo-mechanical analysis of structures	
Two major publications in the field proposed for the PhD :	
M. Ferhi, R. Djebali, S. Abboudi, H. Kharroubi. Conju	gate natural heat transfer scrutiny in differentially
heated cavity partitioned with a conducting solid using the lattice Boltzmann method. J Therm Anal Calorim	
H. Benzenine, R. Saim, S. Abboudi, et al. Three-dimensional analysis of heat transfer in a channel provided	
with solid baffle, single and double perforation: A heat exchanger application. Int Jour. of Num. Meth. for	
Website address of the personal page :	
Supervisor's email : said.abboudi@utbm.fr	
Description of the research work proposed for a PhD	Topic # (see list) : V-4
Development of lattice structures for highly efficient he	eat evehangere
Title:	at extrangers
Subject :	
This thesis aims to develop new metallic structures for thermal components. Increasing the heat transfer between a	
fluid and a thermal system can help for saving energy resource, preventing undesirable thermal degradation or	
improving the efficiency of thermal exchangers. Such achieve	
solutions. We suggest to work in that direction. The PhD works will consist in finding various efficient structures that	
can improve the heat transfer between an incompressible fluid flow and structures. New structures will be designed	
and optimized depending on the conjugate heat transfer with the fluid. This work includes analytical approaches to	
find out objective functions we can rely on for a good parame	
a Multiphysics simulation using finite element and/or finite volume codes (Comsol and Ansys softwares), and virtual	
tests will be performed to identify some optimal heat transfer devices with general guidance about both heating and	
flow conditions for an efficient conjugate heat transfer.	
Keywords:	
New metal structure, heat exchanger, modeling, CFD, optimi	zation
Expected collaborations :	
Collaboration: régional and national industries (TotalEnergies	s)
Background required from the applicant :	
Mathematical modeling, CFD analysis, convective heat transfer, optimization methods	
Friedrich of a DDE file datalling the group and the collection in	- Income
Existence of a PDF file detailing the proposal ("yes" or "no"): (see guidelines on the website www-csc.utt.fr)	yes

Research Grants for PhD students from the China Scholarship Council