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 : SIROUX Given names : MONICA

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

Laboratory :	Laboratoire des sciences de l'ingénieur, de l'informatique et de l'imagerie (ICUBE)	Website address :	icube.unistra.fr
Institution :	Institut National des Sciences Appliquées (INSA) de Strasbourg	Website address :	www.insa-strasbourg.fr

Scientific competence of the supervisor:

M. Siroux is Full Professor at INSA - Icube Laboratory University of Strasbourg. She received her PhD in 1996 from the University Paris XII and the Accreditation to supervise research in 2008 from University of Valenciennes France. Between 2013-2019 Professor Siroux was Director of the Energy and Electrical Engineering Department in INSA and Director of a Research Chair "Innovative Walls". She leads a group of researchers and PhD students. Main field of her research are Energy efficiency in buildings and Renewable energy. Professor Siroux published about 100 research papers in international journals and international conferences and supervised over 15 doctoral students. She chaired many

Two major publications in the field proposed for the PhD :

1. T. PFLUG, B. BUENO, M. SIROUX, T. KUHN, Potential analysis of a new removable insulation system, Energy and Buildings, Vol. 154, November 2017, p 391-403, 2017
2. T. PFLUG, N. NESTLE, T. KUHN, M. SIROUX, C. MAURER Modeling of facade elements with switchable U-value, Energy and Buildings, Vol. 164, April 2018, p 1-13, 2018

Website address of the personal page : https://gce.icube.unistra.fr/index.php/Monica_Siroux

Supervisor's email : monica.siroux@insa-strasbourg.fr

Description of the research work proposed for a PhD ***Topic # (see list) :*** V.4

Title : Buidings design based on bioclimatic performances

Subject :

INSA Strasbourg and GCE team of the Strasbourg laboratory ICUBE is a recognized player in the field of energy efficiency and renewable energies. The PhD thesis focuses on the building design based on a bioclimatic approach. Bioclimatic design of a building use passive strategies to achieve an indoor environmental quality at minimum energy consumption. The methodology of this PhD thesis is based on the estimation of bioclimatic performance indicators from numerical simulations of buildings under various climatic conditions. The indicators will be used for the building design and several solutions based on renewable energies (solar, biomass, wind, geothermal) and local materials will be explored. A thermal modelling and a sensitivity study will be undertaken. Then these indicators will be used to provide technical solutions for bioclimatic buildings.

Keywords :

Bioclimatic design, energy efficiency, renewable energy

Expected collaborations :

Background required from the applicant :

Specific knowledge: Programming in Matlab, Basic knowledge of multi-physical modeling.
Desired education: Master or Engineer (Bac + 5) with a specialization in Energy Engineering,
Desired personal skills: Motivation for innovation and the research in international context. Good writing skills, ability to analyze and summaries problems and adaptability.

Existence of a PDF file detailing the proposal ("yes" or "no") : no
(see guidelines on the website www-csc.utt.fr)