

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 : Website address :

Institution : Website address :

Scientific competence of the supervisor:

Expert in the field of two-phase flow with more than 50 papers published on the topic. Specialist in heat transfer, thermodynamics and fluid mechanics.

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 :

The global tendency towards miniaturization driven by the microelectronics industry is pushing system density and packaging towards unprecedented values of thermal design power, with a dramatic reduction of the surface area of the devices. Vertical integration, which consists of single dies stacked and connected by means of Through-Silicon-Vias (TSVs), is a promising architecture, but it is hampered by the requirement of finding innovative and more effective cooling technology for dissipating the greater amount of heat. On-chip interlayer two-phase cooling represents a very attractive long-term solution for this problem. However, the design of a two-phase-based cooling system and the ability to predict its performance depend on both the availability of high-accuracy experimental data and appropriate models. The focus of the present study is thus to provide a broad experimental database to describe the physical processes associated with two-phase flow and characterise the thermal and hydraulic performances of a new micro evaporator, in order to assess its feasibility for the realization of a two-phase-based cooling technology. During the Thesis, an existing experimental test bench will be modified and used in order to get the experimental database.

Keywords :

Expected collaborations :

Background required from the applicant :

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

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