

The Politecnico di Torino is aiming to enhance its activities in the field of Simulation through Advanced Scientific Computing and High Performance Computing. Within this objective, it is seeking to act as the Host Institution for a

## **Marie Curie Intra-European Fellowship for Career Development**

in the Programme "People" of the EC Seventh Framework Programme (FP7-PEOPLE-2009-IEF). See [http://cordis.europa.eu/fp7/dc/index.cfmfuseaction=UserSite.PeopleDetailsCallPage&call\\_id=198](http://cordis.europa.eu/fp7/dc/index.cfmfuseaction=UserSite.PeopleDetailsCallPage&call_id=198) for more details.

Researchers with the appropriate background and skills, who are interested in carrying out the activity described below at the Politecnico di Torino for a period of 12 to 24 months, should get in touch as soon as possible with the initiative coordinator:

Professor Claudio Canuto

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The research proposal, to be prepared by the Applicant in cooperation with the Host Institution, must be submitted to the European Commission in Brussels **not later than August 18, 2009**.

### **Background and skills**

In addition to the formal requirements specified by the European Commission in the Call, the candidate should have:

- a good expertise in programming in the languages C++/C/fortran;
- some expertise in MPI, possibly with knowledge of multi-thread programming (OpenMP, pthread, etc.);
- possibly some expertise in visualization tools, to be integrated into numerical simulation software;

### **Activity**

The candidate will work on leading-edge research projects in Engineering Sciences, requiring a significant amount of Computational Sciences and High Performance Computing (HPC). Supercomputing activities will be developed in cooperation and with the support of CINECA, the Italian large-scale facility located near Bologna (<http://www.cineca.it>).

Research could focus on (for example) one of the following topics:

- modeling tools for the design of next-generation electronic systems;
- multi-physics and multi-scale modeling of energy technologies, systems and networks;
- nano-particle modeling and simulation;
- civil engineering and architectural modeling;
- mathematical modeling and numerical analysis.

While no specific background in Engineering or Applied Mathematics is strictly required, the candidate should be interested in expanding her/his knowledge, by working in a team with experts in these fields. The candidate's task will mainly consist of supporting the implementation, testing and exploitation of numerical simulation software through HPC tools.