



## Special issue of International Journal of Electronics on Evolutionary Synthesis of Network-on-Chip Based Systems



### **Description and Motivations**

Network-on-Chip (NoC) is an emerging paradigm for communications within large VLSI systems implemented on a single silicon chip. IT is used as a new approach to designing complex System-on-a-chip (SoCs) design. NoC-based systems can accommodate multiple complex SoC designs. In a NoC-based system, modules such as processor cores, memories and specialized IP blocks exchange data using a on-chip network. A NoC is constructed from multiple point-to-point data links interconnected by switches also called routers, such that messages can be relayed from any source module to any destination module over several links, by making routing decisions at the switches.

VLSI designers of NoC-based systems face several problems, among which we can cite, for instance, planning the architecture that is most suitable to a given application in order to improve performance and mapping the sub-systems that form the application into the multiple tiles of the NoC infra-structure. Evolutionary computation can be used as a very robust tool to bring some answers to this kind of design problems.

This special issue of *International Journal of Electronics*, published by *Taylor & Francis*, covers hardware, middleware and application designs and synthesis tools that exploit the evolutionary computation principles to provide CAD tools for NoC-based systems. Submitted papers can describe applications, computing models, modeling frameworks, or hardware platforms and architecture. Best papers selected from those accepted for the special session on the topic of CEC09 (<http://www.cec-2009.org/sessions.shtml#netChip>) & ICAIS09 (<http://www.isys.uni-klu.ac.at/icais09/index.php>) will be invited to submit an extension of their paper with 30% new material. All submitted papers will be subjected to the review process.

### **Important dates:**

- Extended Paper Submission: November 30<sup>th</sup>, 2009;
- Decision Notification: March 29<sup>th</sup>, 2010;
- Camera-Ready Submission: April 30<sup>th</sup>, 2010

If you intend to contribute to this special issue, please send a *title* and *abstract* of your contribution to the guest editors. The submissions must be in a format consistent with the author guidelines of *IJE*, available at <http://www.tandf.co.uk/journals/journal.asp?issn=0020-7217&linktype=5> to [nadia@eng.uerj.br](mailto:nadia@eng.uerj.br). When submitting, please indicate that your manuscript is a Special Issue Paper on NoCs. For questions regarding submissions to the special issue, please contact one of the guest editors.

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