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Biological Processes & Petri Nets

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Preface

These proceedings contain the five peer-reviewed contributions as well as the (extended) abstracts of the three complementary accepted presentations given at the Third International Workshop on *Biological Processes & Petri Nets* (BioPPN 2012), held as a satellite event of PETRI NETS 2012, in Hamburg, Germany, at June 25, 2012.

The workshop has been organised to provide a platform for researchers aiming at fundamental research and real life applications of Petri nets in Systems and Synthetic Biology. Systems and Synthetic Biology are full of challenges and open issues, with adequate modelling and analysis techniques being one of them. The need for appropriate mathematical and computational modelling tools is widely acknowledged.

Petri nets offer a family of related models, which can be used as a kind of umbrella formalism – models may share the network structure, but vary in their kinetic details (quantitative information). This undoubtedly contributes to bridging the gap between different formalisms, and helps to unify diversity. Thus, Petri nets have proved their usefulness for the modelling, analysis, and simulation of a diversity of biological networks, covering qualitative, stochastic, continuous and hybrid models. The deployment of Petri nets to study biological applications has not only generated original models, but has also motivated research of formal foundations.

We received three types of contributions: research papers, work-in-progress papers and posters. All submissions have been reviewed by four to five reviewers coming from or being recommended by the workshop's Program Committee. The list of reviewers comprises 18 professionals of the field. The five accepted peer-reviewed papers (with an acceptance rate of 78%) involve 23 authors coming from three different countries. In summary, the workshop proceedings enclose theoretical contributions as well as biological applications, demonstrating the interdisciplinary nature of the topic.

The workshop programme was complemented by the invited talk *Petri Nets - an Integrative Framework for Advanced Biomodel Engineering* given by Wolfgang Marwan from the Magdeburg Centre for Systems Biology (MaCS), Otto-von-Guericke University Magdeburg, Germany.

For more details see the workshop's website <http://www-dssz.informatik.tu-cottbus.de/BME/BioPPN2012>.

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June 2012

Monika Heiner
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