

CALL FOR PAPERS - SPECIAL ISSUE

INTERNATIONAL JOURNAL OF NEURAL SYSTEMS

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Impact Factor: 6.4 ON Spiking Neural P Systems

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Membrane Computing (MC) is a computing technology inspired by the structure and functionality of living cells. This technology enables the definition of a wealth of computational models called membrane systems or P systems. Over the past twenty years, MC research has rapidly grown and many research papers and volumes, including a handbook have been published. Research advances in MC include 1) theoretical aspects, such as studies on computational power, complexity, modelling capabilities; 2) applications such as modelling of phenomena of biology, engineering, robotics, graphics, just to mention a few.

Spiking Neural P systems (SN P systems) are MC models that capture within their computing framework the concepts of spiking neurons and the way in which information is encoded in the frequency of electric impulses. Hence, SN P systems can be regarded as hybrid neural and membrane systems. SN P systems have been studied in relation to the theoretical aspects of these models, showing that their computational power is the same as Turing machine, whereas the modelling expressiveness allowed to construct learning models for solving classification problems, to design optimization algorithms applied to engineering problems, or to conceive faults diagnosis approaches.

The **International Journal of Neural Systems**, now in the 30th year of publication and published ten times per year, is planning a special issue on *Spiking Neural P Systems* to be published in 2020. This special issue

collects original research works about recent advances in SN P Systems. Theoretical results, applications, and implementation aspects are welcome. The list of topics includes, but is not limited to:

- New SN P system architectures and variants
- Studies on computing power, computing efficiency and computational complexity of SN P systems
- Optimised training of SN P systems and SN P Systems to aid optimisation algorithms and tackle optimisation problems
- Interesting applications of SN P systems to model problems in, e.g., engineering, economics, biology

Please email the following items in the format requested to the EIC by **May 15, 2020**:

- 1) A statement that this manuscript is your “*original unpublished work and the manuscript or any variation of it has not been submitted to another publication previously.*” This journal does not consider papers rejected by other journals. You may request an exception to this policy but must submit ALL the correspondence and reviews received from the journal that rejected your paper.
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 - what significant real-life problem the research is addressing, and
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The submitted papers will be considered for the **Hojjat Adeli Award for Outstanding Contributions in Neural Systems** with a cash prize of \$5000.