Preface

The Twentieth Brainstorming Week on Membrane Computing (BWMC) was held in Sevilla, from January 24 to 26, 2024, hosted by the Research Group on Natural Computing (RGNC) from the Department of Computer Science and Artificial Intelligence of Universidad de Sevilla. The first edition of BWMC was organized at the beginning of February 2003 in Rovira i Virgili University, Tarragona, and all the next editions have been taking place in Sevilla since then, always at the end of January and/or at the beginning of February.

In the style of previous meetings in this series, was conceived as a period of active interaction among the participants, with the emphasis on exchanging ideas and cooperation. Several "provocative" talks were delivered, mainly devoted to open problems, research topics, announcements, conjectures waiting for proofs, or ongoing research works in general (involving both theory and applications). Joint work sessions were scheduled on the afternoons to allow for collaboration among the about 30 participants – see the list in the end of this preface.

This edition has been celebrated in conjunction with the 1st International Workshop on Virus Machines, where this new model of computation was introduced to the P community and new ideas raised from the collaboration with the attendants of the conference.

The papers included in this volume, arranged in the alphabetic order of the authors, were collected in the form available at a short time after the brainstorming; several of them are still under elaboration. The idea is that the proceedings are a working instrument, part of the interaction started during the stay of authors in Sevilla, meant to make possible a further cooperation, this time having a written support.

A selection of papers from this volume will be considered for publication in the *International Journal of Neural Systems*, published by World Scientific (`https://www.worldscientific.com/worldscinet/ijns`).

Other papers elaborated during the 2024 edition of BWMC will be submitted to other journals or to suitable conferences. The reader interested in the final version of these papers is advised to check the current bibliography of membrane

computing available in the domain website `http://ppage.psystems.eu`.

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The list of participants as well as their email addresses are given below, with the aim of facilitating the further communication and interaction:

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As mentioned above, the meeting was organized by the Research Group on Natural Computing from Universidad de Sevilla (`http://www.gcn.us.es`)– and all the members of this group were enthusiastically involved in this (not always easy) work.

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The Editors
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