

# Introduction to Membrane Computing

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The aim of the course is to provide basic information on the theory of membrane systems (P systems), a vivid area of bio-inspired computing, and their applications.

Main topics to be covered:

1. A brief history of membrane computing, the roots and background of the theory.
2. Symbol-object membrane systems (P systems), their computational power and size complexity.
3. Antiport P systems, P systems with only communication, their computational power and size properties.
4. Active P systems, membrane systems with dynamically changing structure, their efficiency, their use in solving (NP complete) problems.
5. Applications of membrane systems.

## References:

1. Gh. Păun: Membrane Computing. An Introduction. Springer, 2002
2. Gh. Păun, G. Rozenberg, A. Salomaa (eds.): The Oxford Handbook of Membrane Computing. Oxford University Press, 2012