

Nonlinear dynamics (KDIT72)

syllabus

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Project 1:

Systems far-from-equilibrium. Self-organization vs. self-assembly. Classification of the oscillatory chemical reactions.

Model of the oscillatory BZ reaction and the characterization of the oscillations

Experiments: oscillating BZ reaction

Project 2:

Complex oscillations and chaos. Characterization and illustration of chaos.

Calculations of the Lyapunov exponents

Experiments: Chua-áramkörbeli komplex oszcillációk, káosz megjelenítése

Project 3:

Spatiotemporal pattern formation. Turing patterns and their characterization. Turing patterns in the CIMA reaction, conditions of the pattern evolution.

Modern topics in systems chemistry.

Experiments: waves and spirals in the BZ reaction