

# **Patterns, Broken Symmetries and Computation: Emergent complexity in collective dynamics of diffusively coupled oscillatory media**

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Collective dynamics of networks of coupled excitable and oscillatory units can result in surprising spatio-temporal patterns, often arising from spontaneous symmetry breaking. Such patterns are often seen in models motivated by natural systems - such as the brain, the gravid uterus and plankton blooms in the open seas - and have been experimentally studied using chemical systems such as the Beluoso-Zhabotinski reactions in microfluidic devices. This talk will present our recent exploration of the fascinating world of pattern formation in spatially extended excitable/oscillatory media. We will conclude with the suggestion of an intriguing possibility, viz., of using our understanding of the genesis & stability of these patterns and their transformations into each other in order to perform "chemical computation".