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Self assembled materials for photonic applications

Self-assembly comprises the bottom up techniques whereby mostly small objects (from atoms to microparticles) organize into larger architectures. Among those colloidal techniques are optimal for the fabrication of optical functionality structures like photonic crystals and photonic glasses. Complemented with templating, these techniques show immense potential since, further to the possibilities in morphologies reachable; they expand through the materials available.

One of the most relevant features of these systems, directly related with their photonic functionality is order. Order is a crucial ingredient for complexity, which turns a crucial ingredient for functionality.

In this presentation, some of the most relevant aspects of self-assembly and templating techniques paying special attention to the role of order; how to combat, create or control it and how to put it to use to obtain photonic functionalities have been reviewed.

Speaker Biography

Cefe López completed his PhD at the Universidad Autónoma de Madrid, Spain. Currently he heads a group (luxerum.org) in the Materials Science Institute in Madrid that accumulates more than twenty years' experience in photonic materials. His work covers materials synthesis and optical properties with special emphasis in order and disorder and its impact in photonic properties of materials. His 150 publications have been cited over eight thousand times and has been serving as an editorial board member of reputed journals.

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