**4co New Fabrication Methods of Micro/Nanodevices: Use of Wet Stamping Techniques**

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Nature often uses reaction-diffusion(RD) as a means of making structures and materials of unique properties or morphologies on scales from macro- (e.g., stripes in zebras, tigers, and seashells, and formations in trees, agates, and rocks) to microscopic (e.g., cellular growth, chemotaxis and biological waves). However, reaction-diffusion phenomena have not yet been applied in modern material science and microtechnology. In this context, RD systems are particularly promising for micropatterning of surfaces. Unlike conventional micropatterning techniques that modify the properties of the substrate only at the locations to which a modifying agent - be it a chemical or radiation - is delivered, RD can, in principle, evolve chemicals delivered onto a surface into structures of characteristic dimensions significantly smaller than those of the original pattern.

I will describe a new micropatterning technique called Wet Stamping, in which reaction-diffusion is used to transform microscopic patterns of chemicals delivered onto thin films of dry gelatin into regular arrays of lines of submicrometer thicknesses, multicolor arrays on the micrometer scale, or three-dimensional microstructured surfaces. A discussion of the nonlinear nature of the reaction-diffusion mechanism will be presented. Finally, the development of applications in optics and microfluidics based on these RD systems will be discussed.