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Using polymer chemistry and block copolymers to create a viable nanopatterning strategy

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The fabrication of nanoscopic devices will increasingly rely on the precise control over materials properties and function on very small size scales, typically 5 nanometers to a few microns. The most promising approach to this is a 'bottoms-up' approach relying on self-assembly and recent developments in 'living' free radical procedures have allowed the construction of tailor-made polymer molecules that facilitate this strategy. The design and application of functionalized block copolymers in developing a viable nanopatterning strategy and their application in advanced storage devices and microelectronics for the information technology industry will be discussed.