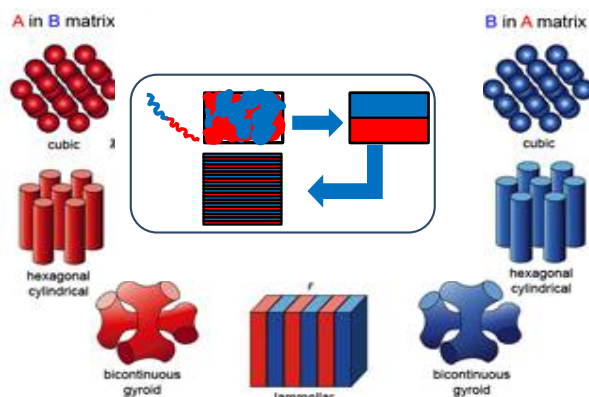


Self-Assembly Nanopattern Technology

Self-assembly is a powerful and effective method for creating and manipulating nano-scale templates and patterns. This technology provides a **simple, cost effective** approach to make equally spaced periodically ordered uniform size **inorganic oxide nanostructures** on different substrates for many technology applications. These oxide nanostructures can be used as a **hard mask** to create high aspect ratio **nanopillars** and **nanolines**, avoiding high cost, complex top-down processes.

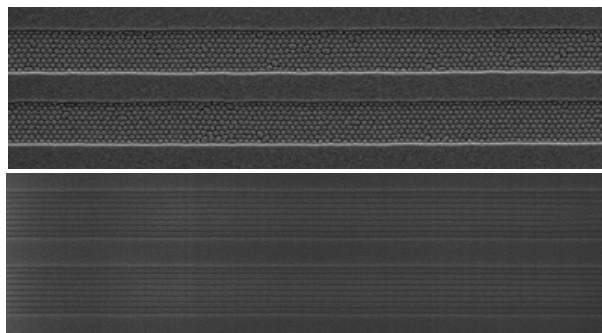
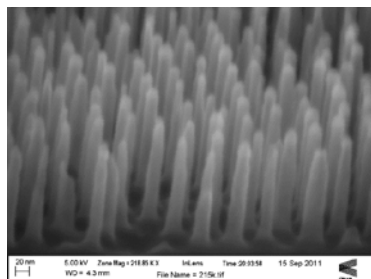
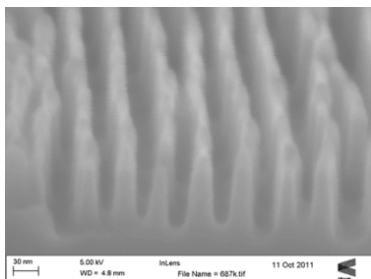
Block copolymers (BCP) consists of carefully engineered polymers that are chemically dissimilar. When chemically dissimilar materials are mixed they will tend to **phase separate** however, because these polymers are chemically bound they can only **micro-phase separate** this allows generation of well-ordered, defect free aligned structures.



Example of chemical process.

Advantages

- Long range defect free nanopatterns
- Wide range of features sizes - **micron to nanometer**
- **Low cost** - suitable for spraying, dipping & printing
- **Multi substrates** - metal, polymer, glass and silicon
- Can easily produce lines, cylinders, pillars & spheres
- Patterns formed without the need for light exposure
- No proximity problems - Self-aligned/registration



Examples of patterns and materials prepared from this technology.

Applications

This type of technology can be used in a variety of industries including:

- Electronics, photonics, magnetic and environmental applications
- Suitable for use on silicon, glass, metals and polymers
- Nanopatterning for light reflection or absorption

Technology and Patent Status

The technology has been developed to a proof of concept stage. Testing and optimisation is on-going. A patent has been filed.

The opportunity

This method can be easily integrated into standard production systems such as spraying, dipping and printing.

We are seeking industry partners to license and or develop this technology for particular applications.

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