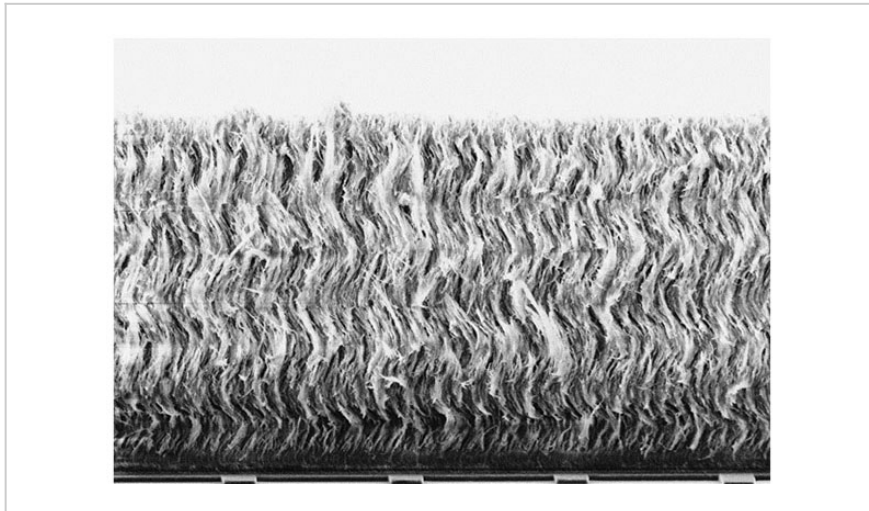


Sculptured Thin Films to Control Cellular Processes

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PennState



Paracyclophane sculptured thin film

Technology Summary

The disclosed invention entails polymeric sculptured thin films of nanoscale topography. The films feature porous, three-dimensional textures at both the nanoscale and microscale thereby promoting cell adhesion, proliferation, and differentiation. They are made of biocompatible materials and are formed by physical and chemical vapor deposition - no masks are needed. One may coat the films in strips, sheets, or on prefabricated polymeric and inorganic parts.

Application & Market Utility

Controlling cellular proliferation, differentiation, and adhesion is essential for many biotech applications. One may presently achieve such control with sculptured thin films of microscale topography and these films can be functionalized to promote cellular processes. However, the materials comprising these films are frequently incompatible with cellular matter (silicon rapidly degrades when interacting with biofluids).

Next Steps

Seeking research collaboration and licensing opportunities.

TECHNOLOGY READINESS LEVEL

4-7

Seeking

Investment | Licensing | Research

Keywords

- sculptured thin films
- nanoscale topography
- microscale topography
- vapor deposition
- biocompatible polymers

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