

Improved Process for a Hexagonal Nanopillar Patterning

Description:

The use of nanopillars for use in energy storage in applications such as solar panels and battery technologies is a current industry interest. This technology features a process for fabricating arrays of standing metallic nanopillars on a glass or silicon substrate with a large pillar diameter (>250 nm) and a large interpillar distance (> 1 micron). The nanomaterial may include material such as aluminum, gold, silver, copper, titanium, or tantalum which can be deposited through a conventional electrodeposition process.

Applications:

- Supercapacitors and supercharge batteries for portable electronics and mobile devices
- Structured electrodes in sensors
- Biomedical, automotive, and everyday consumer battery and energy applications

Benefits:

- Pillars grown directly on substrate
- Large interpillar distance ($>1\mu\text{m}$) achievable in simple electrochemical process
- Compatible with universal microfabrication processing techniques

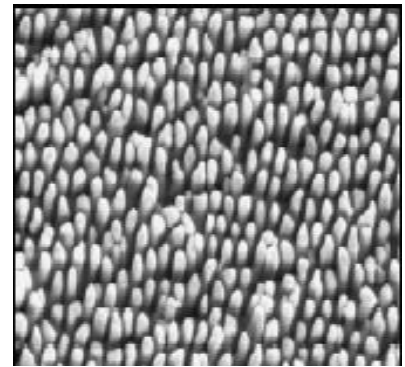


Figure 1. SEM picture of nanopillars formed on substrate

Inventor: Guigen Zhang
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Licensing Status: Available for licensing
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