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Nano-fabrication by nanoelectrode lithography

- You can duplicate a oxide pattern directly on a substrate -

Motivation

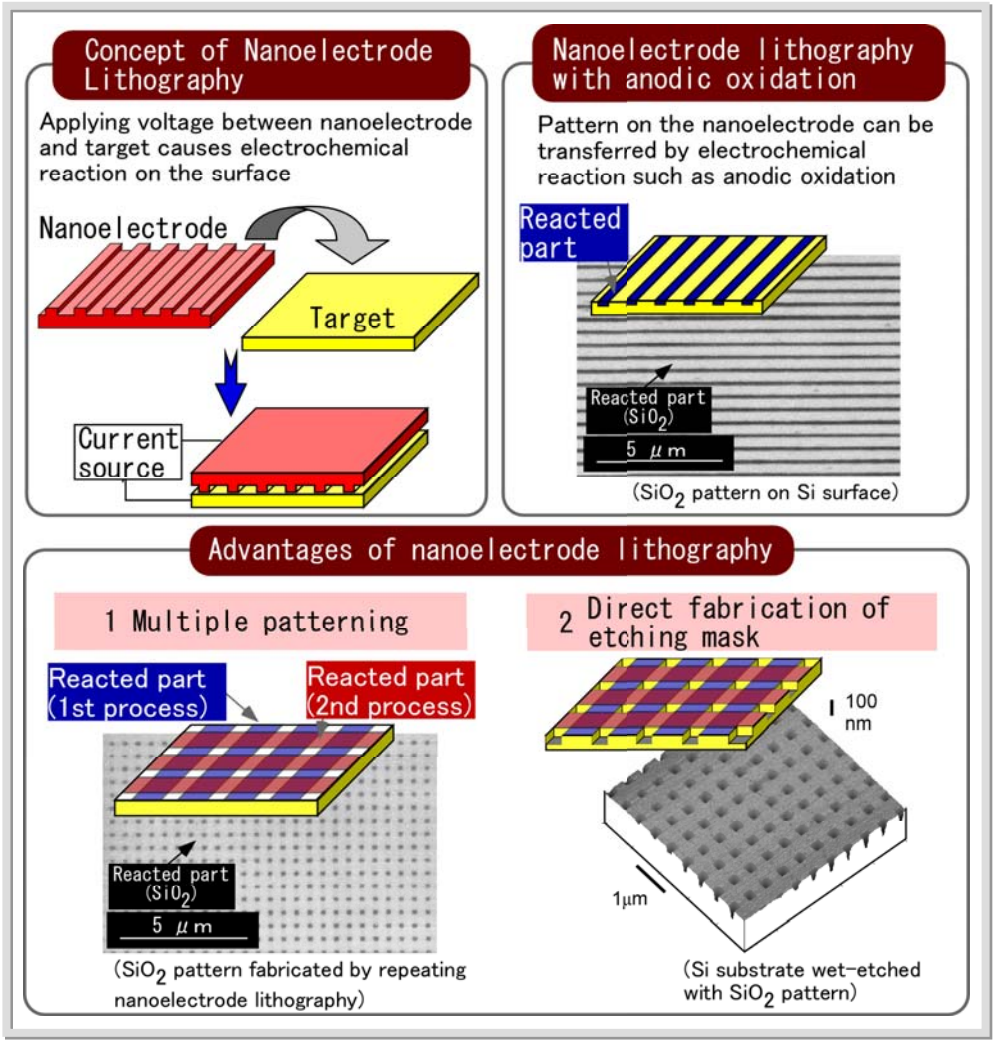
Device fabrication with sub-micron structure requires patterning process in large facilities with vacuum chamber. Nanoimprint lithography can duplicate a mold pattern to a resist. However, when we try to duplicate a mold pattern with small feature size, it has some difficulty, such as releasing process.

Originality

Nanoelectrode lithography transfer the pattern by electrochemical reaction, while nanoimprint lithography transfer the pattern physically. Oxide pattern can be directly fabricated and act as etching mask, that means resist-free patterning. It also shows flexibility that enables pattern modification with multiple patterning.

Impact

With resist-free patterning in nanoelectrode lithography, we may achieve pattern duplication with higher accuracy and improved critical dimension. It can provide nano-fabrication process with low cost and low environmental burden. Nanotechnology can be utilized in application field more widely with nanoelectrode lithography.



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