ISTITUTO ITALIANO
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TITLE

Masked Cation Exchange Lithography

INVENTORS

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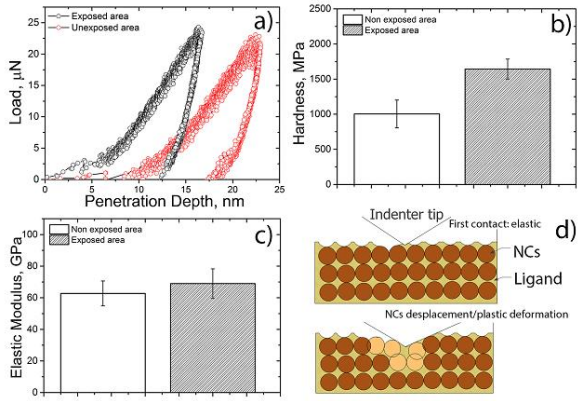
DESCRIPTION

The present invention relates to a method for patterning of colloidal nanocrystals films that combines a high energy beam treatment with a step of cation exchange. The high energy irradiation causes cross-linking of the ligand molecules present at the nanocrystal surface, and the cross-linked molecules act as a mask for the subsequent cation exchange reaction. Consequently, in the following step of cation exchange, the regions that have not been exposed to beam irradiation are chemically transformed, while the exposed ones remain unchanged. This selective protection allows the design of patterns that are formed by chemically different nanocrystals, yet in a homogeneous nanocrystal film.



APPLICATIONS

Luminescent patterns, electronic circuits, nanocrystal films

KEYWORDS

Colloidal, nanocrystals, beam irradiation, film

BIBLIOGRAPHIC DATA

Masked cation exchange lithography	
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