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**Li et al.**

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(54) **METHOD OF FABRICATING  
LOW-DISLOCATION-DENSITY  
EPITAXIALLY-GROWN FILMS WITH  
TEXTURED SURFACES**

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patent is extended or adjusted under 35  
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**C30B 21/02** (2006.01)

(52) **U.S. Cl.**  
USPC ..... **117/89**; 117/90; 117/95; 117/912;  
117/915

(58) **Field of Classification Search**  
USPC ..... 117/915, 912, 89, 90, 95  
See application file for complete search history.

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(57) **ABSTRACT**

A method for forming a surface-textured single-crystal film  
layer by growing the film atop a layer of microparticles on a  
substrate and subsequently selectively etching away the  
microparticles to release the surface-textured single-crystal  
film layer from the substrate. This method is applicable to a  
very wide variety of substrates and films. In some embodi-  
ments, the film is an epitaxial film that has been grown in  
crystallographic alignment with respect to a crystalline sub-  
strate.

**18 Claims, 7 Drawing Sheets**

