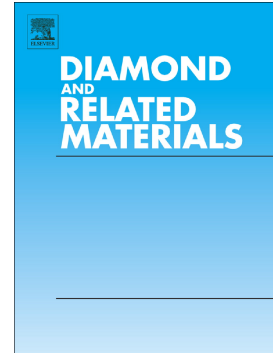


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**Partial Formation of Linear Concavo-convex Microstructure onto  
Microwells by Diamond-like Carbon Thin Film Deposition**

Masahito Ban\*, Tsuyoshi Hagiwara, Yoshizumi Masumoto

Dept. of Innovative Systems Engineering, Nippon Institute of Technology,

4-1, Gakuendai, Miyashiro, Minami-saitama, Saitama, 345-8501, Japan

\*Corresponding author. Tel/fax: +81 484 33 7724, E-mail address: ban@nit.ac.jp

Abstract

By a procedure to partially deposit rigid diamond-like carbon (DLC) thin films using a mask on a soft elastomer, poly(dimethylsiloxane) (PDMS), substrate directionally stretched, areas with the regular linear pattern consisting of a periodical concavo-convex shape with several  $\mu\text{m}$  size were successfully formed onto microwells fabricated on the substrate. The DLC thin film depositions were performed by an inductively-coupled plasma (ICP) CVD method, and the optimal deposition conditions, mainly the substrate bias voltage of  $-650\text{ V}$ , to form the linear pattern of the periodical concavo-convex shape were revealed. When an elongation strain applied on the PDMS substrate increased, the height of the concavo-convex shape increased. In

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