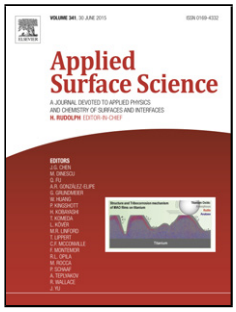

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Crosslinking poly(acrylic glycidyl ether) honeycomb film by cationic photopolymerization and its converting to inorganic SiO_2 film

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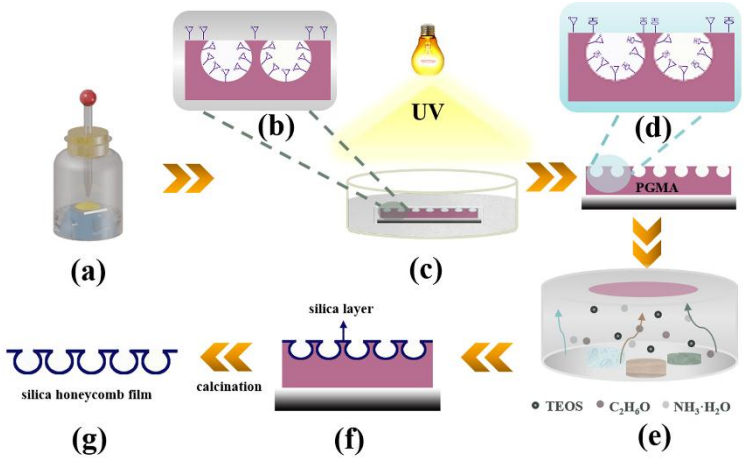
Graphical abstract

Highly ordered hexagonal patterns of homopolymer poly(Glycidyl methacrylate) (PGMA) film was successfully fabricated via static breath figure. This honeycomb film was further modified to enhance the solvent resistance as well as thermal stability through cationic photo-crosslinking of the epoxide via UV irradiation. The obtained film could be used as template to assemble SiO_2 particles via chemical vapor deposition of TEOS under mild condition.



Highlights

- Honeycomb film of homopolymer poly(glycidyl methacrylate) (PGMA) was successfully fabricated via a one-step static breath figure process.
- Solvent and thermal resistance film was formed via cationic photopolymerization of the epoxide group on the side chain of PGMA.
- Silica mircoarrays was formed by using the obtained film as template via chemical vapor