

## Supporting information

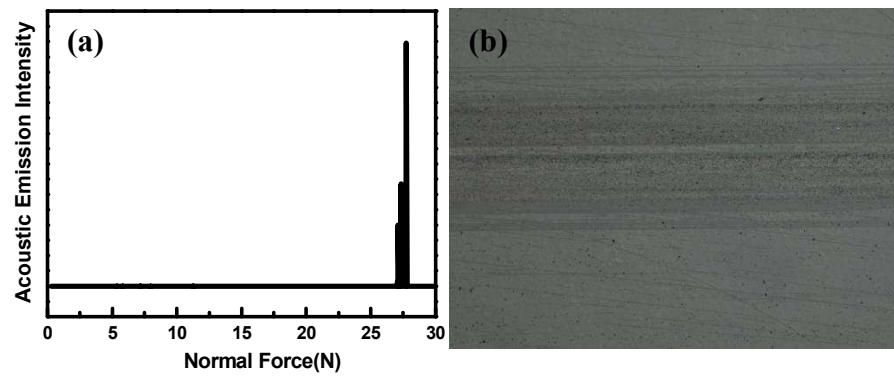
Hollow Rod-like  $\text{MgF}_2$  with Ultra-low Refractive Index for Preparation of Multifunctional Antireflective Coatings

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S1:  $\text{SiO}_2$ - $\text{MgF}_2$  double coatings' mechanical properties. (a) Acoustic emission spectrum of scratches between the coatings and the substrate. (b) Scratches by 6 H pencil on the surface of the coatings.



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