

**Micro-nano structured superhydrophobic polymeric powder coatings.** / M. S. Mozumder, A.-H. Mourad, H. Zhang, J. Zhu. / Nano Studies. – 2015. – # 12. – pp. 25-32. – eng.

This study demonstrates the development of polymeric superhydrophobic polymeric nanocomposite coatings by a solvent-free ultrafine powder coating (UPC) technique. The developed coatings produce water contact angles (CAs) of over  $160^\circ$  and sliding angle (SA) of less than  $5^\circ$ . It is evident that the higher CA and lower SA of the low-energy coatings are attributed to the appropriate surface topography of micro- and / or nano-scales. Pull-off test of the coatings (i.e., maximum normal force tolerable before being detached from the substrates) confirmed their excellent adhesion to the underlying substrates. SEM images revealed the unique double-scale hierarchical (micro- and nano-) structures on the developed superhydrophobic surfaces. As an additional advantage, these superhydrophobic UPC technology eliminates the use of toxic solvents that are responsible for the hazardous emissions of VOCs. Fig. 5, Ref. 23.

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