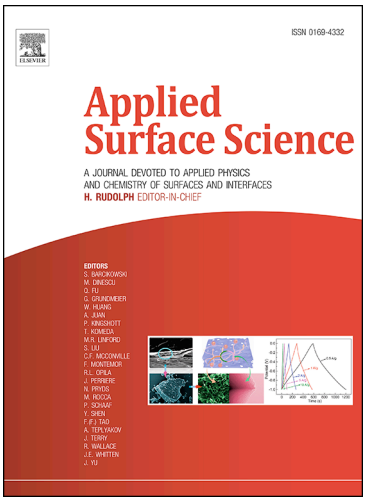

Full Length Article

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Fabrication and Color-Gradient Control of Colorful Superhydrophobic Materials with Mechanical Durable, Oil/Water Separation and Recyclable Properties

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ABSTRACT: The diversity of color and the controllability of color-gradient are both of importance for significantly expanding the practical application of outdoor superhydrophobic coating materials. Herein, a simple method has been proposed to fabricate the colorful superhydrophobic materials with metal oxides. By changing the dosages of metal oxides, the colors of the materials can be well controlled. The resultant materials with multiple colors are experimentally found to be highly robust without significant degradation in the superhydrophobicity, even after various rigorous tests. By virtue of the superior surface wetting properties, the colorful materials can be applied to separate various oil/water mixtures with high efficiency. Furthermore, the obtained materials exhibit outstanding anti-fouling property and favorable reusability, which are crucial for large-scale application of the materials. We greatly anticipate that our strategy will open a new avenue for the colorful superhydrophobic paint and coating research, and accelerate their real applications in the near future.