

Electronic Supplementary Information (ESI)

## UV-resistant superhydrophobic BiOCl nanoflake film by a room-temperature hydrolysis process

Yuanyuan Li,<sup>a,b</sup> Jinping Liu,<sup>\*c</sup> Jian Jiang<sup>c</sup> and Jiaguo Yu<sup>\*b</sup>

<sup>a</sup> Department of Electronic Science and Technology, Huazhong University of Science and Technology, Wuhan 430074, P. R. China

<sup>b</sup> State Key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, P. R. China. Email: [jiaguoyu@yahoo.com](mailto:jiaguoyu@yahoo.com)

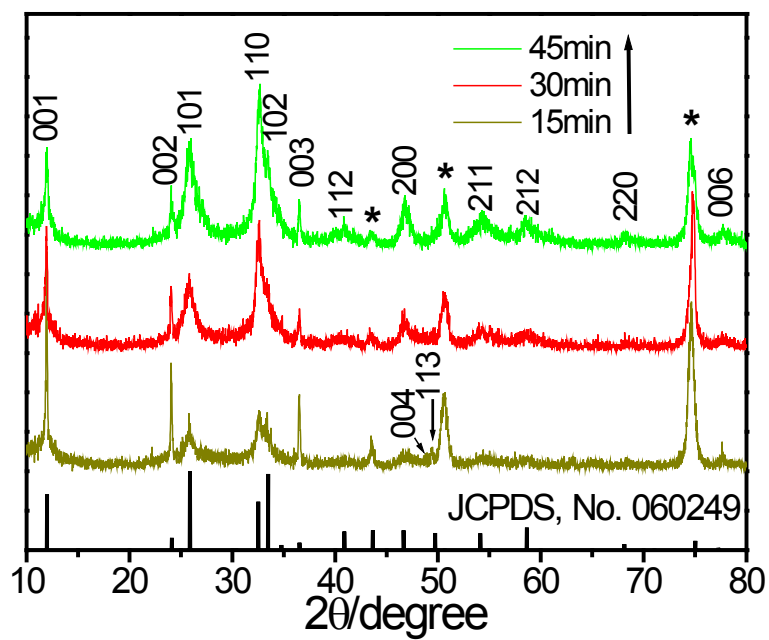
<sup>c</sup> Institute of Nanoscience and Nanotechnology, Department of Physics, Central China Normal University, Wuhan 430079, P. R. China. Email: [liujp@phy.ccnu.edu.cn](mailto:liujp@phy.ccnu.edu.cn)

### Experimental

The synthesis was very simple. Typically, a piece of SS foil (2 cm×2 cm, pretreated by sonication in absolute ethanol and distilled water successively) was suspended in a 60 mL absolute ethanol solution containing 0.5 mmol BiCl<sub>3</sub> for 30 min. After that, the foil was taken out and washed by absolute ethanol gently and then dried at 60 °C in air. The color of the SS foil became white, different from its original metallic luster, indicating the successful growth of BiOCl film. To investigate the film evolution process, control experiments were carried out by varying the reaction time.

To investigate the morphology and structure of the as-prepared film, field-emission scanning electron microscopy (FESEM, JSM-6700F, 5.0 kV), Transmission electron microscopy (TEM, JEM-2010FEF, 200 kV) and X-ray diffraction (XRD, Bruker D-8 Avance) were carried out. UV-vis diffuse reflectance spectrum was recorded on a UV-2550 spectrophotometer in the wavelength range of 200-600 nm. The wettability of BiOCl film samples were evaluated by water CA system (JC2000Y Contact Angle measurement).

## Figures



**Fig. S1.** XRD patterns of the BiOCl films prepared after different immersion time. The star symbol indicates the peaks from substrate.