Supplementary information for:

## How to repel hot water from a superhydrophobic surface.

Zhe-Jun Yu,<sup>*a*</sup> Jieyi Yang<sup>b†</sup>, Fang Wan, Quan Ge<sup>a</sup>, Long-Lai Yang<sup>a</sup>, Zun-Liang Ding<sup>a</sup>, De-Quan Yang,<sup>a\*</sup>, Tayirjan T. Isimjan <sup>c</sup>, Edward Sacher <sup>*d*</sup>

Materials Research Lab., Wuxi Shunye Technology Co., Ltd., 29# Lianze Road, Shanshui Cheng Tech. Park, Suite 15, Binhu District, Wuxi, Jiangsu, 214125, China

<sup>b</sup>Department of Biochemistry, Rosalind and Morris Goodman Cancer Research Centre, 1160 Pine Ave. West, McGill University, Montreal, Quebec, H3A 1A3, Canada

<sup>c</sup>Division of Physical Sciences and Engineering, Solar and Photvoltaics Engineering Center, King Abdullah University of Science and Technology (KAUST), Thuwal 23955-6900, Saudi Arabia.

<sup>d</sup>Laboratory for the Analysis of the Surfaces of Materials, Department of Engineering Physics, École Polytechnique de Montreal, Case Postale 6079, succursale Centre-Ville, Montreal, Québec H3C 3A7, Canada

<sup>†</sup>Summer student

Email. <u>dequan.yang@gmail.com;</u>



Figure S1. Water contact angle measurement instrument setup



Figure S2. A photograph of the SLB2000 apparatus, showing the program-fit water contact angle.



Figure S3. Photographs of Poinsettia leaf parts used for WCA measurements.







Figure S4. SEM photomicrographs of the Poinsettia surface (a) red-leafed, low magnification, and (b) red-leafed, high magnification, indicating some areal loss of the nanoplates; (c) green-leafed, low magnification, and (d) green-leafed, high magnification; (e) red-leafed, after contacting 30°C water, and (f) red-leafed, after contacting 80°C water.



Figure S5. XPS survey spectra of (a)TM101, (b)TM201, (c) OS101, and (d)PU101 samples



Figure S6, C1s XPS spectra of (a) TM101, (b) TM201, and (c) OS101 superhydrophobic coatings.