

## SUPPORTING INFORMATION

# Graphene Oxide Assisted Synthesis of GaN Nanostructures for Reducing Cell Adhesion

Rong Yang,<sup>\* a</sup> Ying Zhang,<sup>a</sup> Jingying Li,<sup>a</sup> Qiusen Han,<sup>a</sup> Wei Zhang,<sup>b</sup> Chao Lu,<sup>a</sup>  
Yanlian Yang,<sup>a</sup> Hongwei Dong,<sup>a</sup> and Chen Wang<sup>\* a</sup>

<sup>a</sup> CAS Key Lab for Biological Effects of Nanomaterials and Nanosafety, National Center for Nanoscience and Technology, Beijing 100190, P. R. China

<sup>b</sup> Institute of Applied Physics and Computational Mathematics, P.O. Box 8009 (28), Beijing 100088, China

\* Corresponding authors: yangr@nanoctr.cn and wangch@nanoctr.cn

**Figure S1**

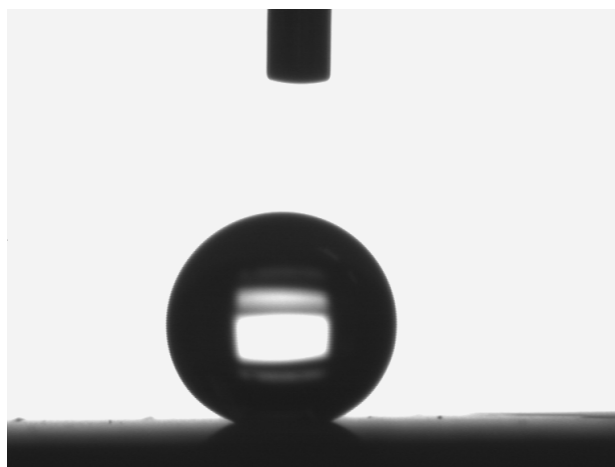


Figure S1. The shape of a water droplet ( $CA=154.4\pm 0.5^\circ$ ) on the GaN NW surface after it has been immersed in water for 96 h. The CA of the NW surface was measured after drying in the dark. (CA was  $155.3\pm 0.4^\circ$  before immersion. )

**Figure S2**

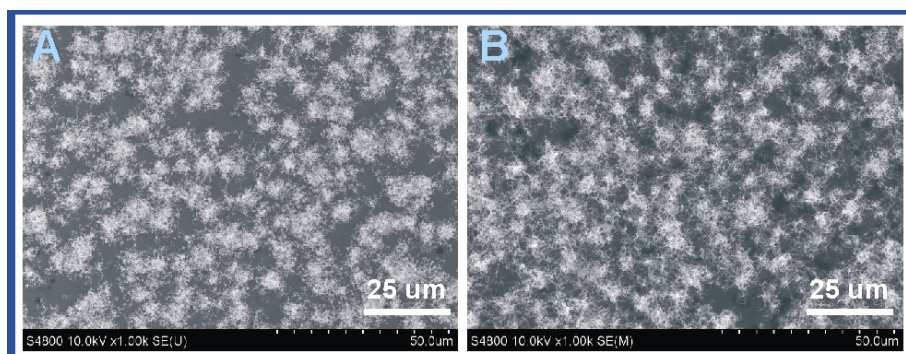


Figure S2. SEM images of a GaN NW substrate before (A) and after (B) 3T3 cells cultured on for 48 h. The GaN NW substrate was washed with PBS solution after 48 h of cell culturing, SEM imaging of the surface did not show any apparent degradation of the substrate.

**Figure S3**

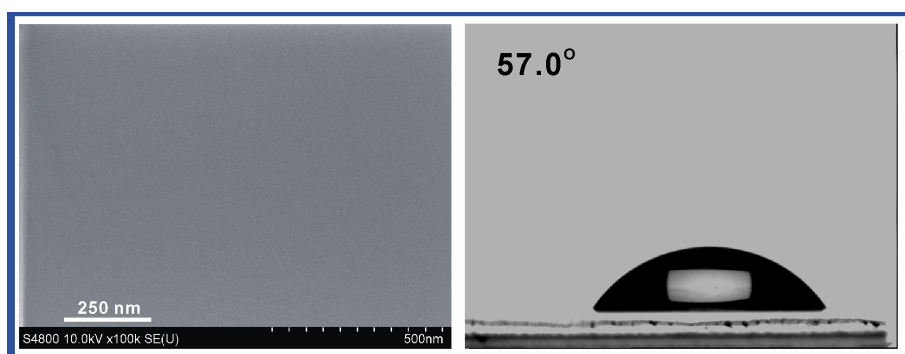


Figure S3. The SEM image of the smooth GaN thin film surface prepared by MOCVD, and the shape of a water droplet on this surface with CA of 57.0°.

**Figure S4**

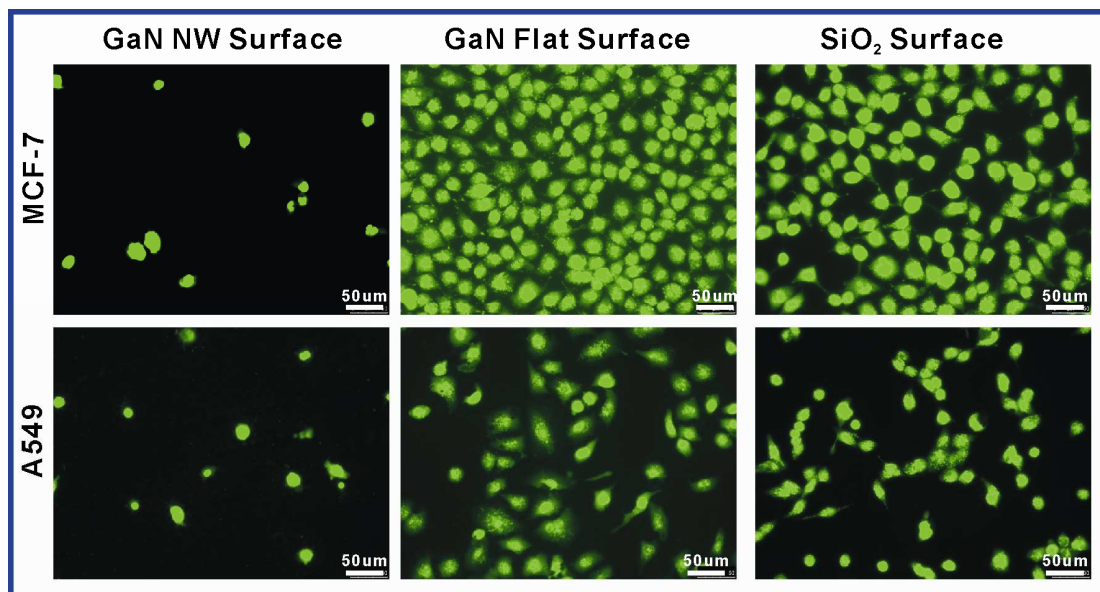


Figure S4 The fluorescence microscopy images of MCF-7 and A549 cells cultured on GaN NW and flat surfaces, and on SiO<sub>2</sub> surface for 48 h. The GaN NW surface used for cell adhesion studies was prepared with the concentration of Ni(NO<sub>3</sub>)<sub>2</sub> solution of 4 mol/ml and the GO concentration of 25 mg/ml. The NW surface was superhydrophobic.

**Figure S5**

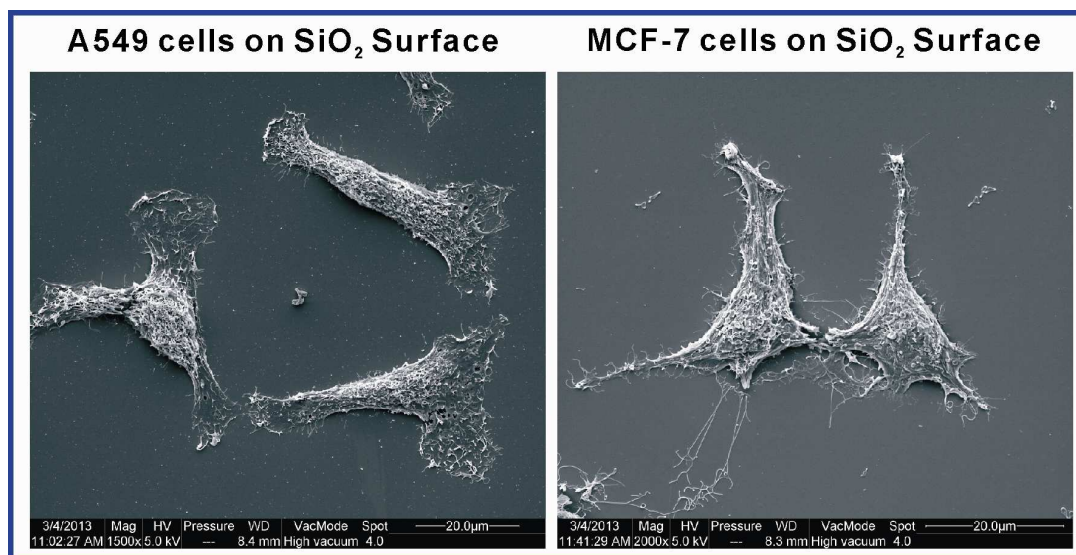


Figure S5. SEM images of A549 and MCF-7 cells cultured on SiO<sub>2</sub> surface for 48 h.

**Figure S6**

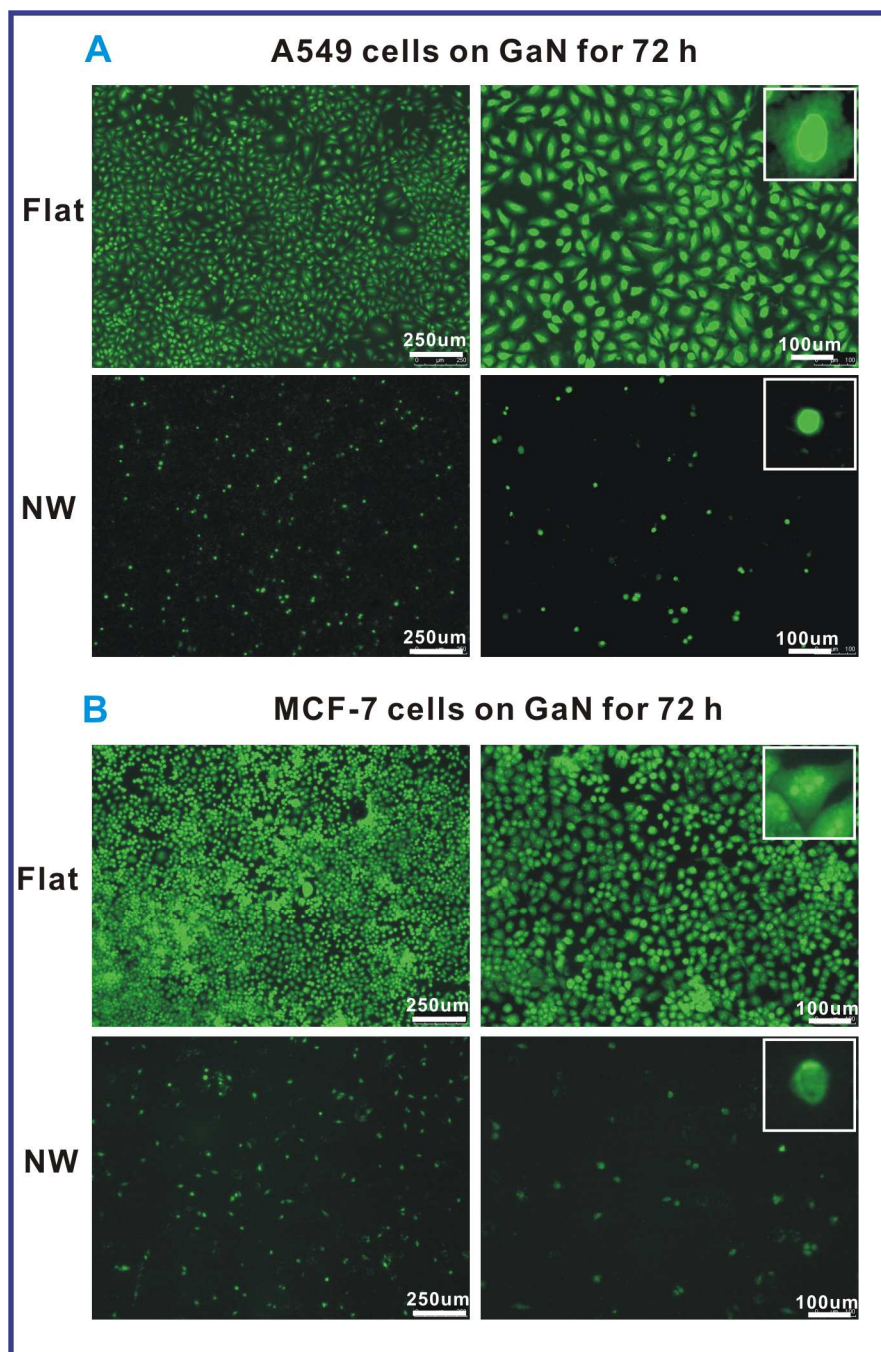


Figure S6. The fluorescence microscopy images of A549 and MCF-7 cells cultured on GaN NW and flat surfaces for 72 h. The GaN NW surface used for cell adhesion studies was prepared with the concentration of  $\text{Ni}(\text{NO}_3)_2$  solution of 4 mol/ml and the GO concentration of 25 mg/ml. The NW surface was superhydrophobic.

**Figure S7**

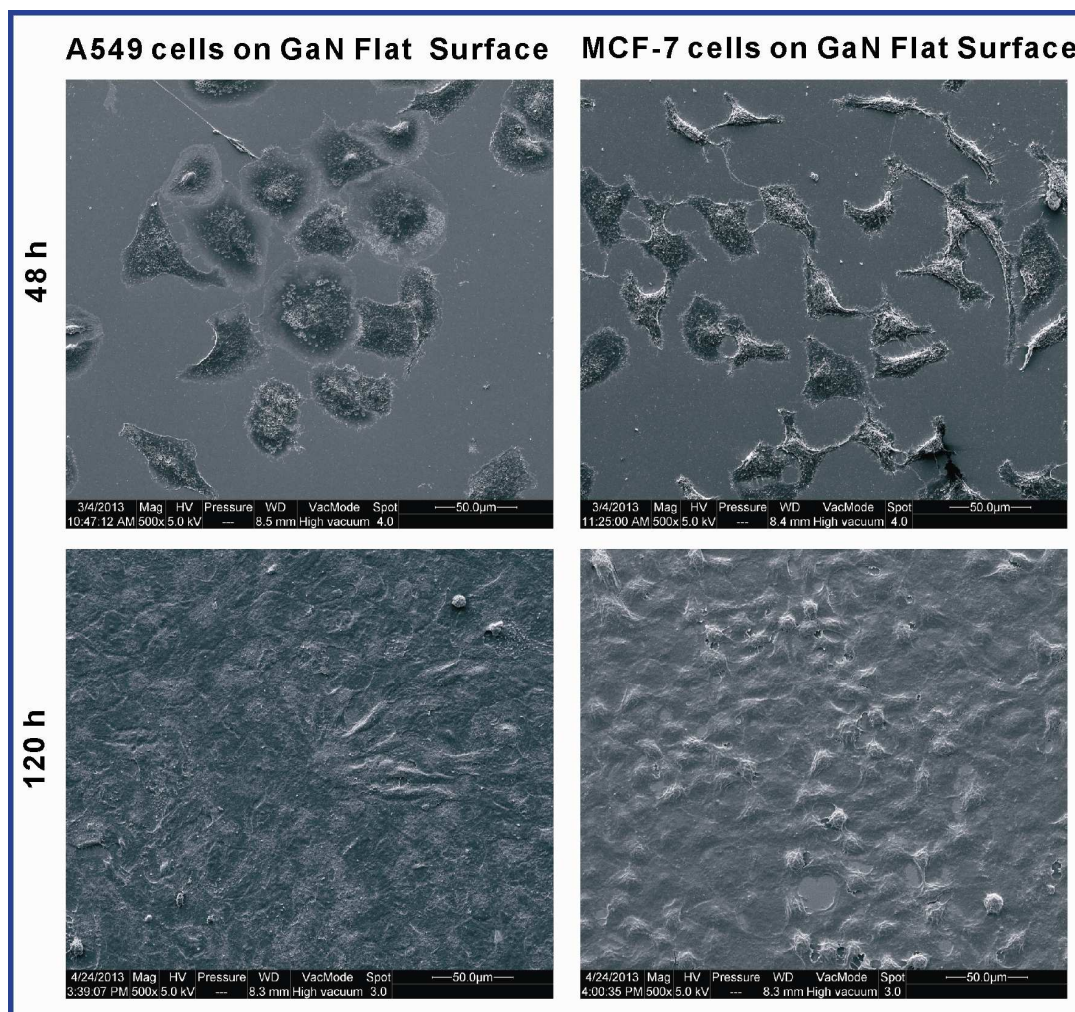


Figure S7. SEM images of A549 and MCF-7 cells cultured on GaN flat surfaces for 48 h and 120 h, respectively.

**Table 1. Numbers of Cells on GaN flat and NW surfaces**

MCF-7 and A549 cells were cultured in 24-well plates and on GaN flat and NW surfaces. After 48 h, 72 h and 120 h, the cells were labeled with acridine orange and studied by optical microscopy. Numbers of cells on GaN flat and NW surfaces were counted with three randomly taken images.

	A549		MCF 7	
	Flat	NW	Flat	NW
48 h	67, 70, 69,	13, 14, 16,	137, 136, 132	18, 18, 20
72 h	89, 86, 87	10, 10, 11	304, 301, 305	11, 10, 11
120 h	382, 379, 385	6, 5, 4	448, 444, 449	5, 6, 7