



## Supporting Information

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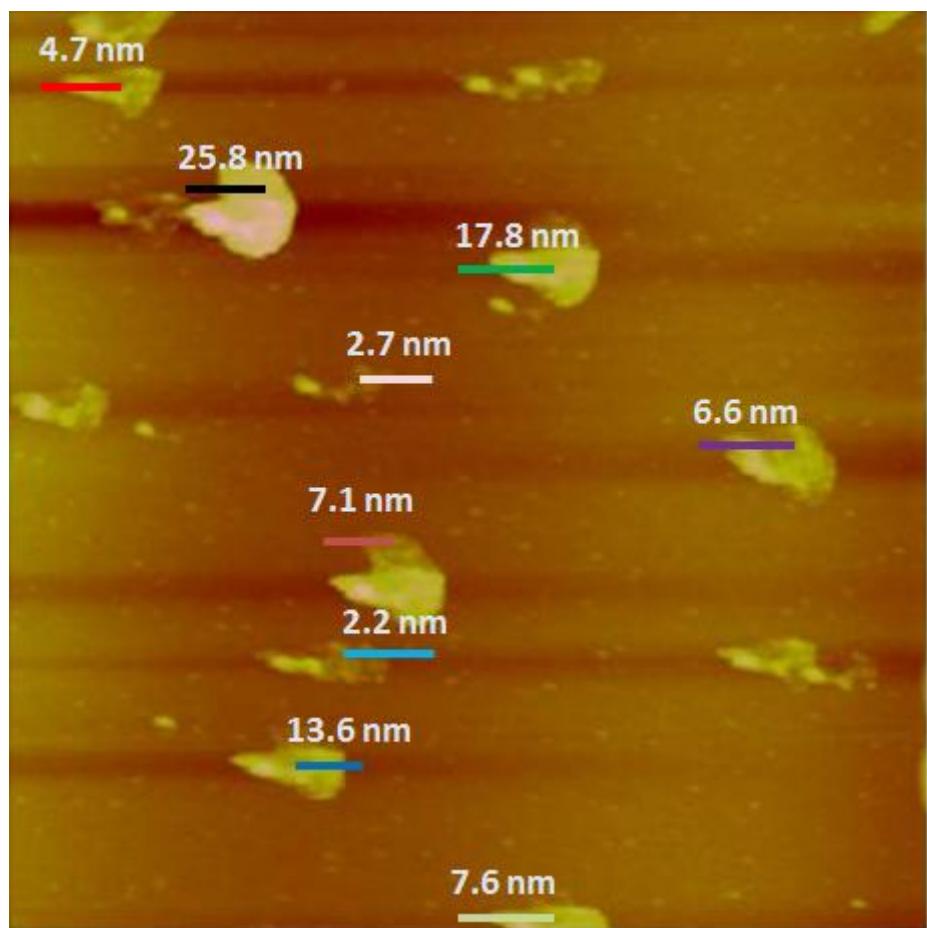
### MoS<sub>2</sub> Nanosheet–Pd Nanoparticle Composite for Highly Sensitive Room Temperature Detection of Hydrogen

*Cihan Kuru, Chulmin Choi, Alireza Kargar, Duyoung Choi, Young Jin Kim, Chin Hung Liu, Serdar Yavuz, and Sungho Jin\**

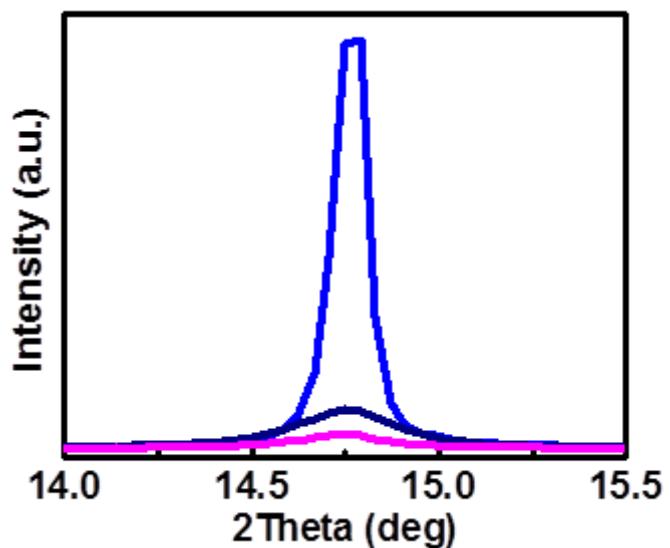
Supporting Information

**MoS<sub>2</sub> nanosheet-Pd nanoparticle composite for highly sensitive room temperature detection of hydrogen**

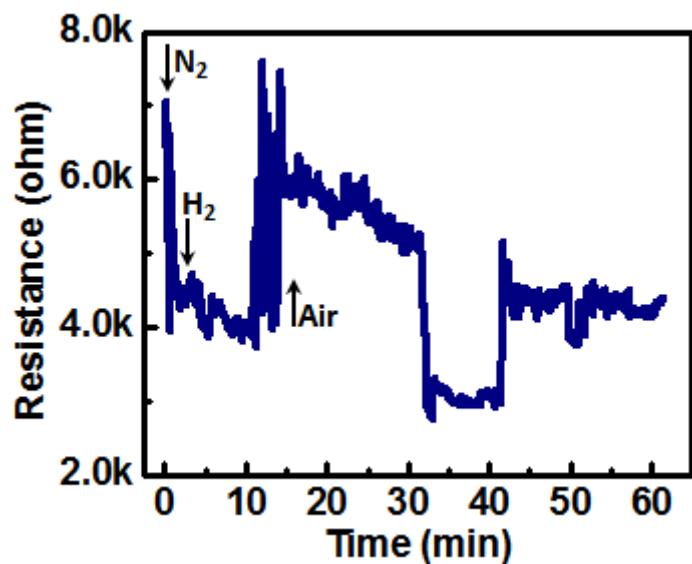
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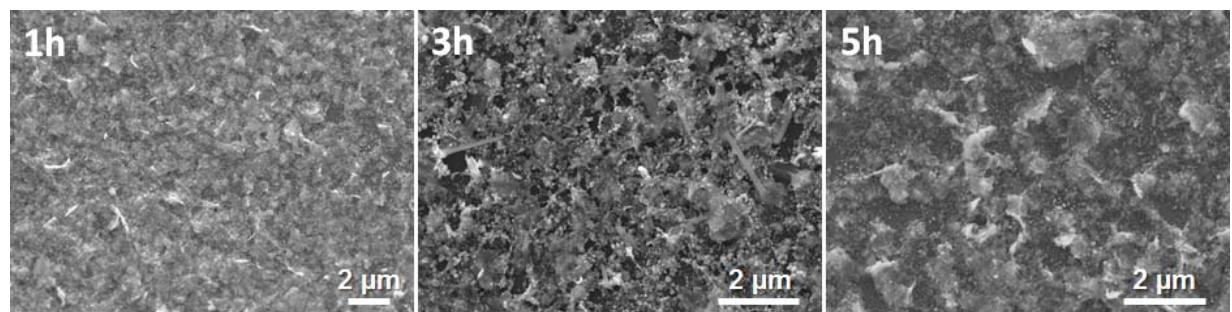
**Figure S1.** AFM image of MoS<sub>2</sub> flakes dispersed on a Si substrate.



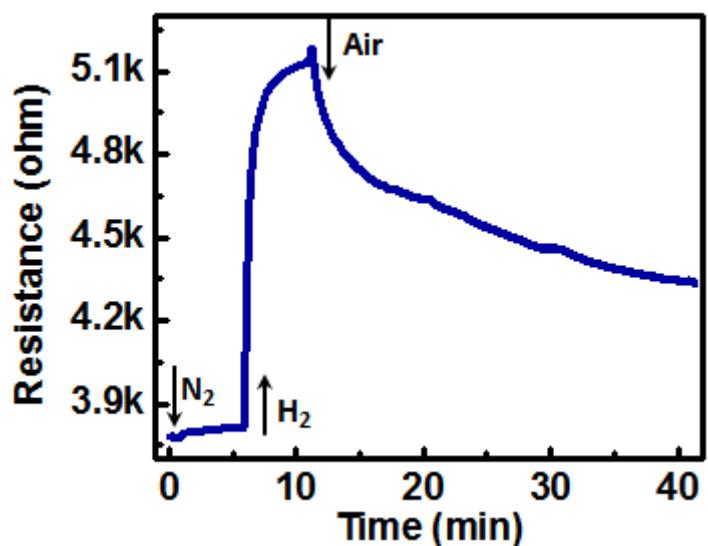
**Figure S2.** (002) XRD peak of bulk MoS<sub>2</sub> (blue curve), MoS<sub>2</sub> nanosheets (navy curve) and MoS<sub>2</sub>-Pd composite (magenta curve).



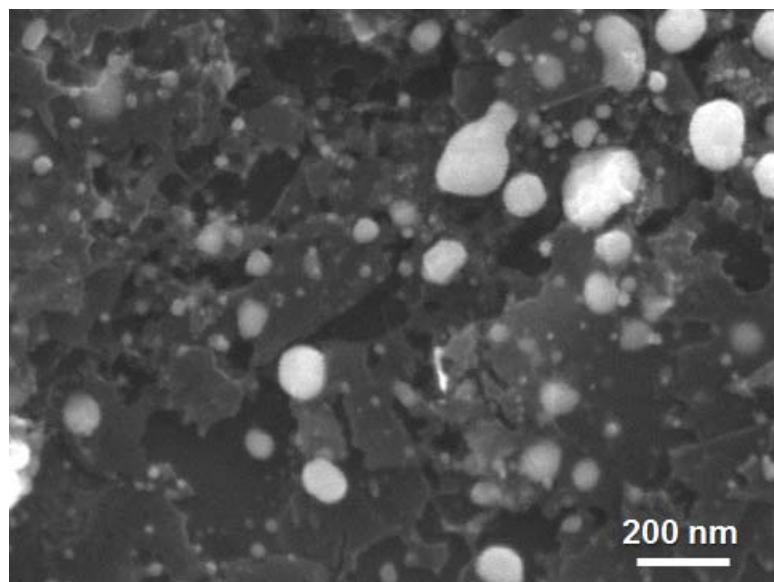
**Figure S3.** Electrical response of MoS<sub>2</sub> nanosheets to 50,000 ppm H<sub>2</sub>.



**Figure S4.** SEM images of  $\text{MoS}_2$ -Pd composites annealed at  $500^\circ\text{C}$  for (a) 1h, (b) 3h and (c) 5 h.



**Figure S5.** Electrical response of graphene-Pd composite to 50,000 ppm H<sub>2</sub>.



**Figure S6.** SEM image of graphene-Pd composite.