

## Electronic Supplementary Information (ESI)

### **Silicon Nanowires-Based Therapeutic agents for *in vivo* Tumor Near-Infrared Photothermal Ablation**

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## **Additional data**

Fig. S1 shows the size distribution of AuNPs coated on SiNWs surface.

Fig. S2 shows EDX pattern of the as-prepared AuNPs@SiNWs.

Fig. S3 shows a digital image of the prepared AuNPs@SiNWs aqueous solutions with different concentrations.

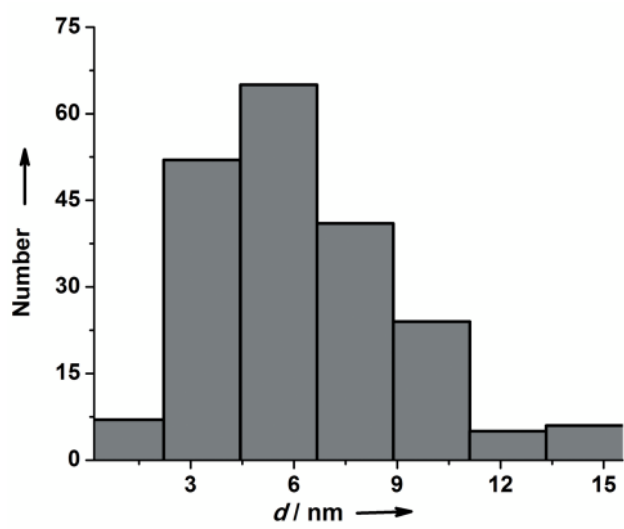
Fig. S4 shows UV-vis-NIR spectrum of the prepared AuNPs@SiNWs, free SiNWs and AuNPs.

Fig. S5 shows photothermal effects of PEG-AuNPs@SiNWs.

Fig. S6 shows *in vivo* photothermal effect of PEG-AuNPs@SiNWs for tumor ablation.

Fig. S7 shows serum biochemistry assay and complete blood count.

Fig. S8 shows change in body weight.



**Fig. S1.** The size distribution of AuNPs coated on SiNWs surface. More than 150 particles were measured in TEM.

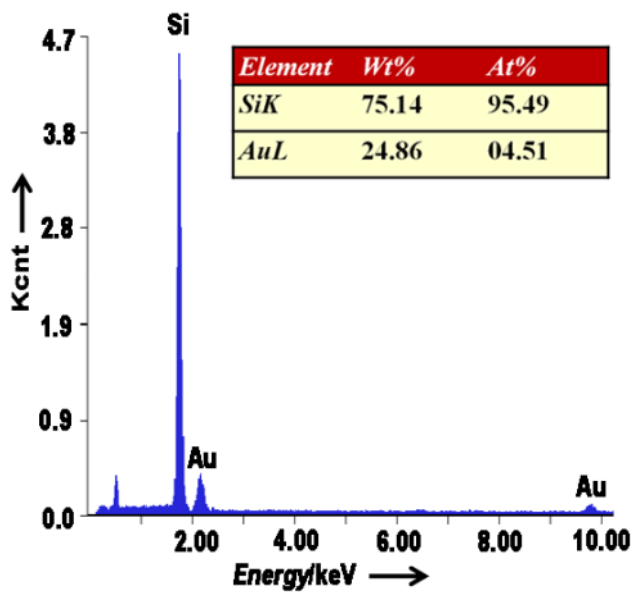
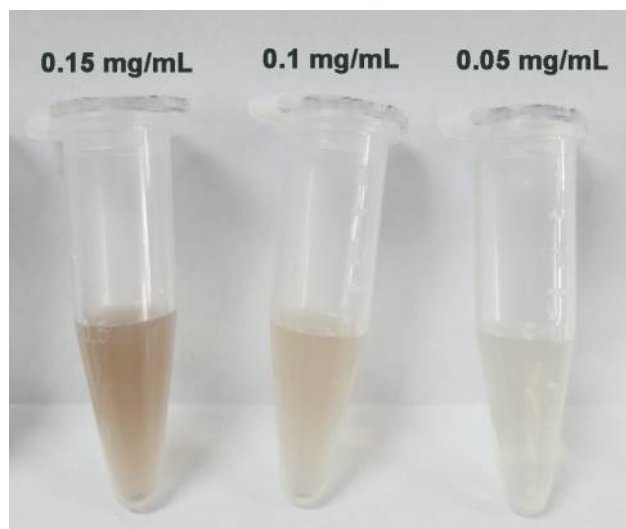
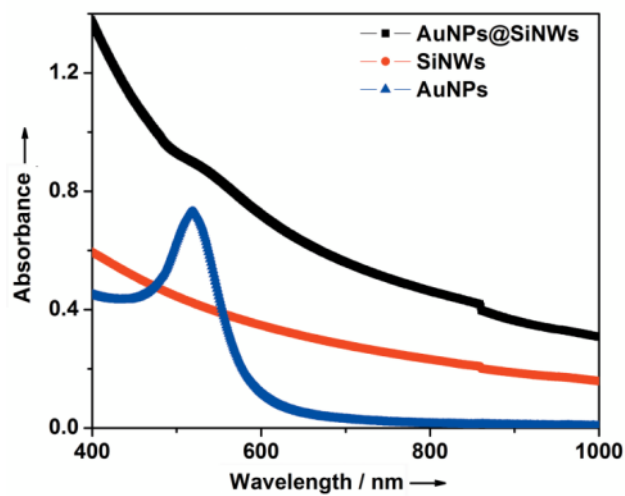


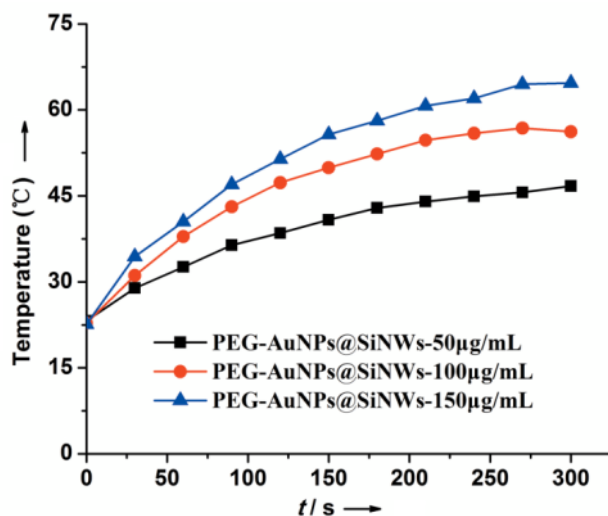
Fig. S2. EDX pattern of the as-prepared AuNPs@SiNWs.



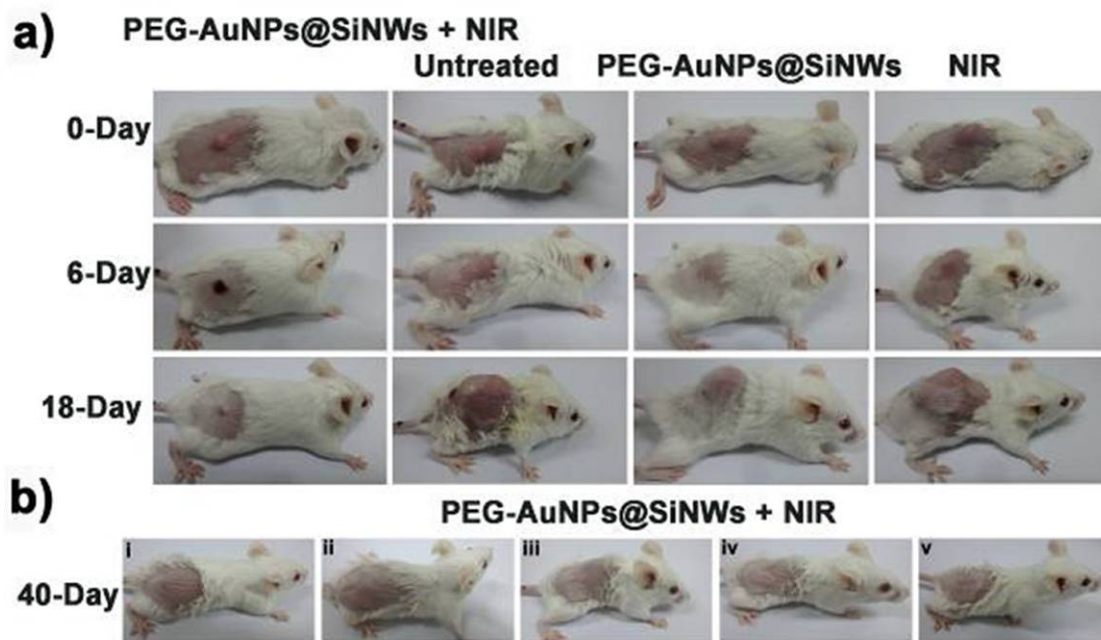
**Fig. S3.** A digital image of the prepared AuNPs@SiNWs aqueous solutions with different concentrations.



**Fig. S4.** UV-vis-NIR spectrum of the prepared AuNPs@SiNWs. Free SiNWs and AuNPs are used as controls. The AuNPs@SiNWs show high optical absorption from UV to NIR regions.

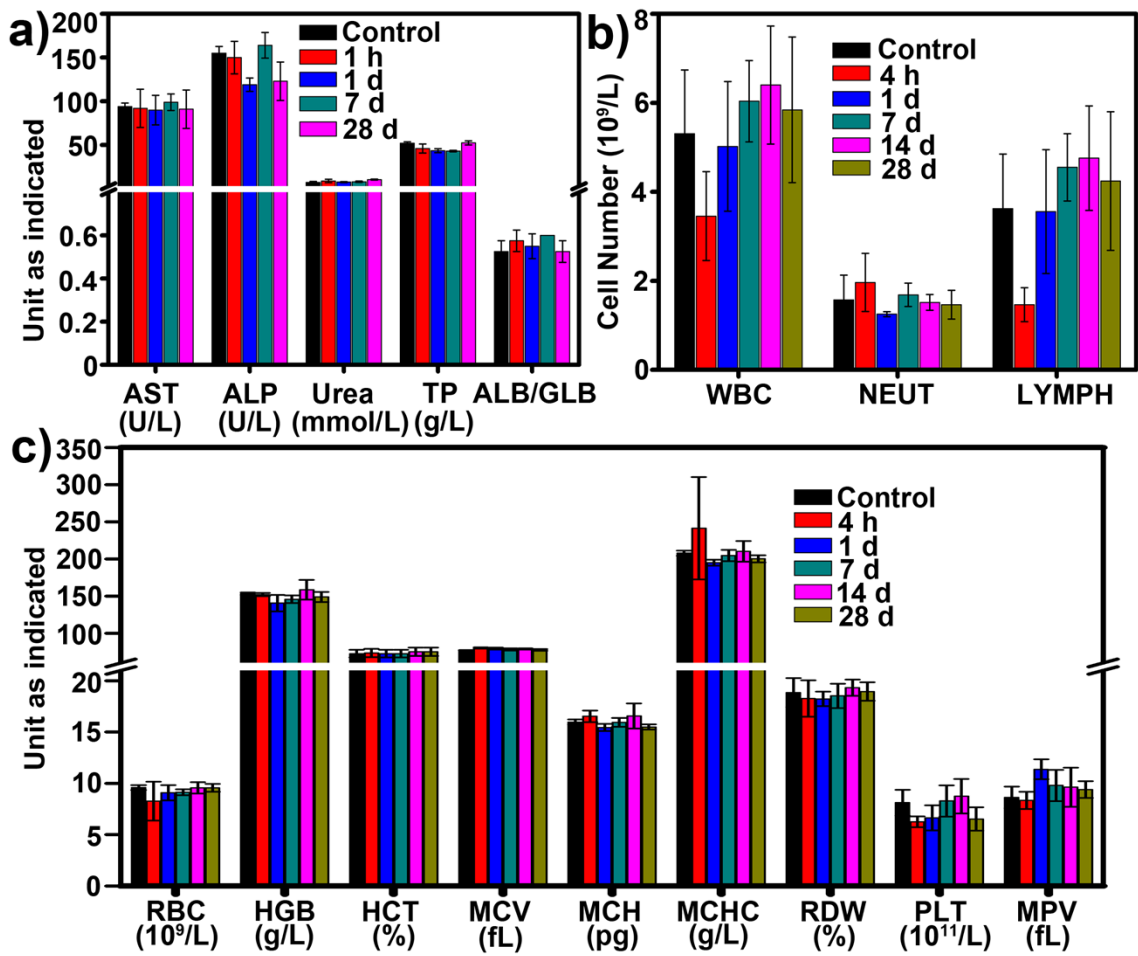


**Fig. S5.** Photothermal effects of PEG-AuNPs@SiNWs. Temperature is increased with increasing exposure time and PEG-AuNPs@SiNWs concentration during NIR irradiation ( $2 \text{ W/cm}^2$ ). Rapid raise of temperature was noted for the PEG-AuNPs@SiNWs.

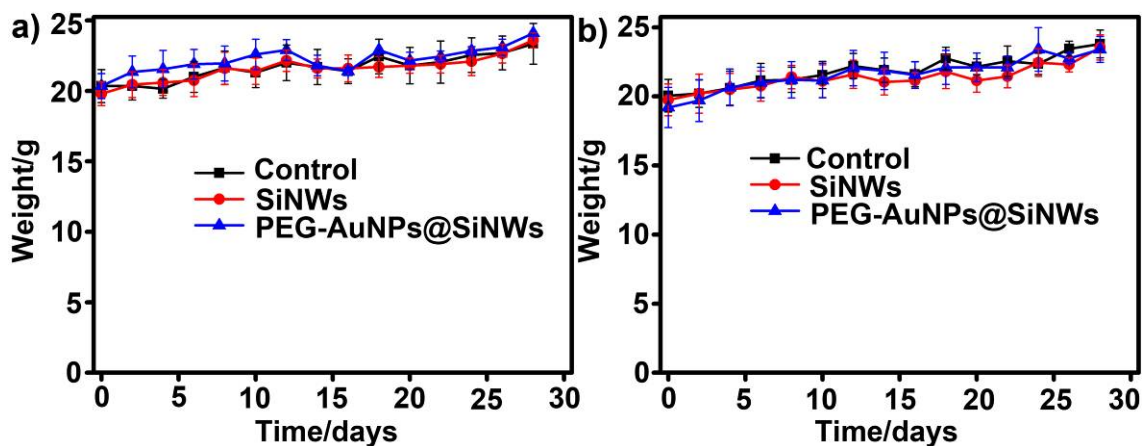


**Fig. S6.** *In vivo* photothermal effect of PEG-AuNPs@SiNWs for tumor ablation. a) Representative photographs of the mice treated in different groups at various time points after each treatment (first column, PEG-AuNPs@SiNWs + NIR; second column, untreated; third column, PEG-AuNPs@SiNWs; fourth column, NIR). b) Five mice after 40-day photothermal treatments from five independent sets.





**Fig. S7.** *In vivo* toxicology study. a) Serum biochemistry results from animals treated with SiNWs and physiologic saline. The results illustrate mean and standard deviation of AST, ALP, urea, TP and ALB/GLB, when the mice are exposed to SiNWs for 1 h, 1, 7 and 28 d. b) and c) Complete blood counts. Blood levels of WBC, NEUT, LYMPH, RBC, HGB, HCT, MCV, MCH, MCHC, RDW, PLT and MPV of control and SiNWs treated mice are measured.



**Fig. S8.** Change in body weight obtained from mice treated with physiologic saline, SiNWs and PEG-AuNPs@SiNWs through i.v. a) or s.c. b) injection, respectively.

## References

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