

**Supporting Information**

**Smart Hydrogel Grating Immunosensors for Highly Selective and  
Sensitive Detection of Human-IgG**

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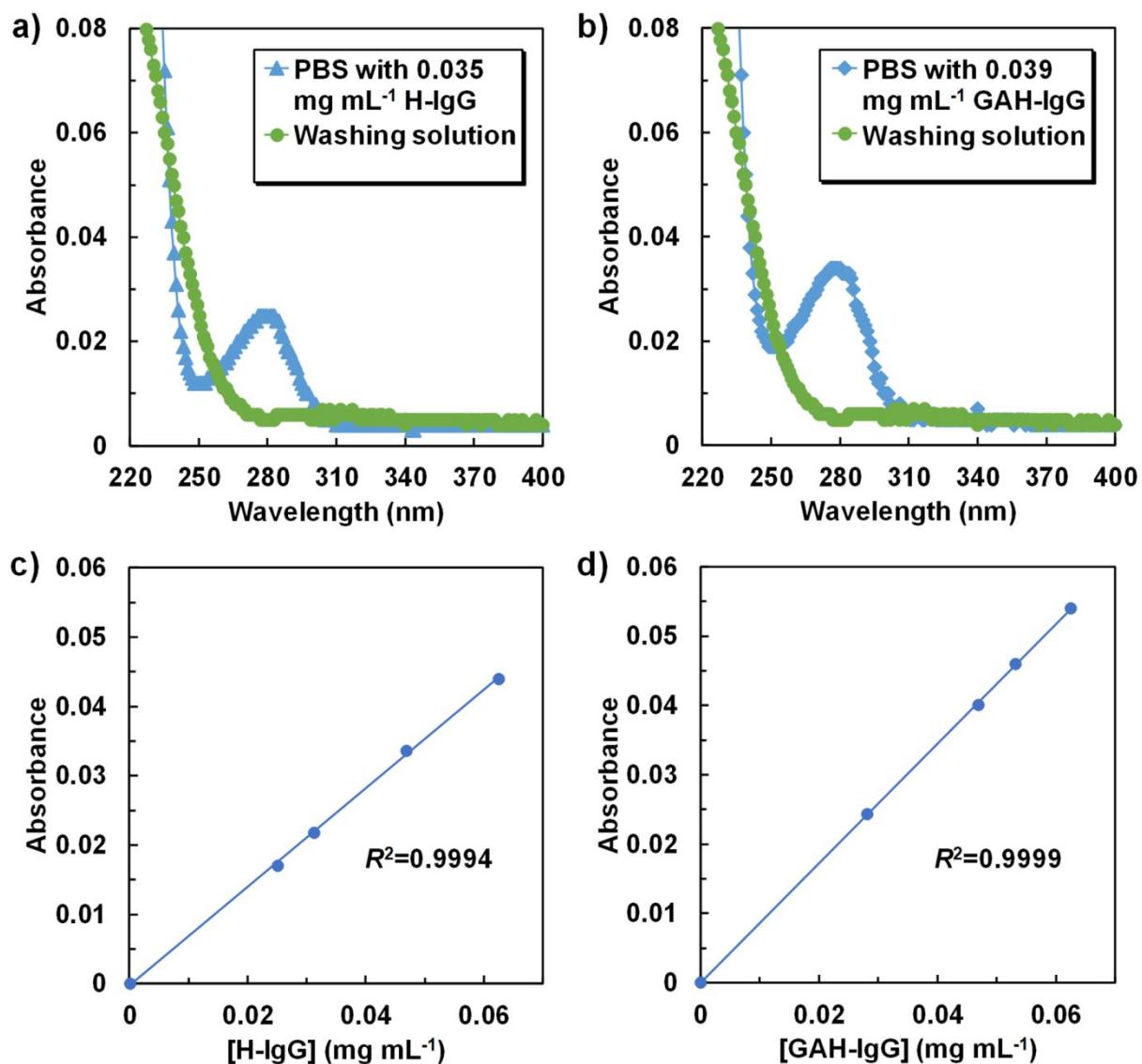
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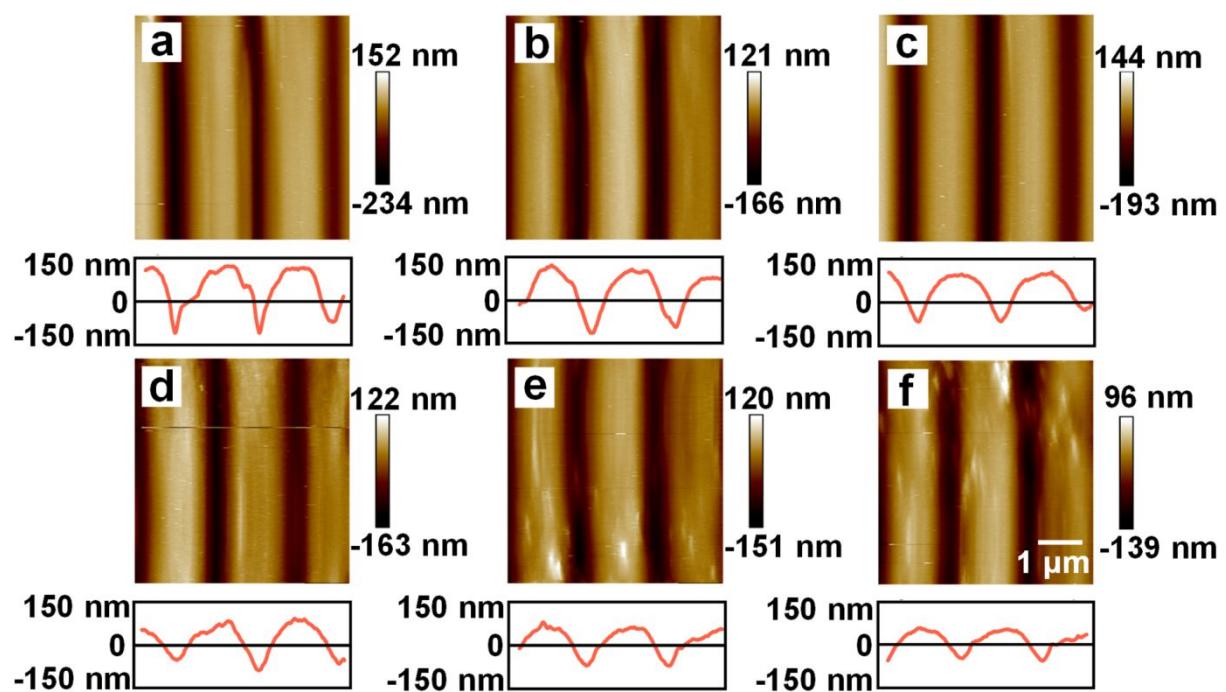
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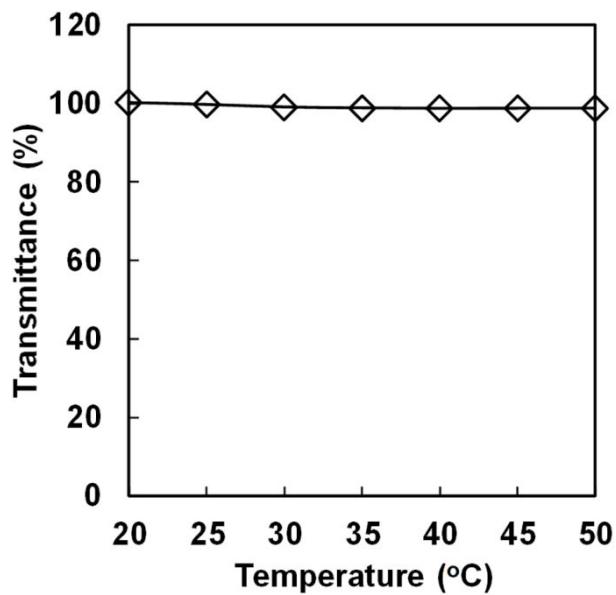
## Supplementary Figures S1-S3



**Figure S1.** UV analyses of washing solutions from affinity chromatography. (a) UV analysis of washing solution and PBS solution with 0.035 mg mL<sup>-1</sup> H-IgG. (b) UV analysis of washing solution and PBS with 0.039 mg mL<sup>-1</sup> GAH-IgG. (c,d) Calibration curves for H-IgG (c) and GAH-IgG (d). The results indicate that ~93 % of H-IgG are polymerized into the hydrogel grating.



**Figure S2.** AFM analyses of hydrated hydrogel gratings at 25 °C (a), 30 °C (b), 35 °C (c), 40 °C (d), 45 °C (e), and 50 °C (f).



**Figure S3.** Transmittance of hydrogel grating at different temperatures.

**Supplementary Table S1****Table S1. Comparison of performances of different optical immunosensors for detection of H-IgG**

Types	Sensor element	Linear range	Detection limit	Ref.
Optical fiber immunosensors	Protein A-modified near-infrared fluorescent single-walled carbon nanotube	0.001~100 $\mu\text{g mL}^{-1}$	10 ng $\text{mL}^{-1}$	[S1]
	Protein A and goat anti-H-IgG covalently immobilized on standard single mode fiber	0.5~5 $\mu\text{g mL}^{-1}$	47 ng $\text{mL}^{-1}$	[S2]
	Polyimide-Mach-Zehnder interferometric sensors modified with Streptavidin and biotinylated anti-H-IgG	5~200 nM	100 pM	[S3]
Surface plasmon resonance immunosensors	Graphene oxide/silver coated polymer cladding silica fiber	5~100 $\mu\text{g mL}^{-1}$	0.04 $\mu\text{g mL}^{-1}$	[S4]
	Multiplexed gold nanorod arrays in biochip	10~60 nM	10 nM	[S5]
	Polydopamine-modified electroless-plated gold film	2~100 $\mu\text{g mL}^{-1}$	2 $\mu\text{g mL}^{-1}$	[S6]
Diffraction grating immunosensors	Self-assembled monolayers of branched-amine-coupled alkanethiol on planar surfaces	0.005~5 mg $\text{mL}^{-1}$	0.005 mg $\text{mL}^{-1}$	[S7]
	H-IgG-responsive hydrogel gratings	13~53 nM	13 nM	This work

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