Our new paper in Scientific Reports

Congratulations to our new paper “**Rectangular plasmonic interferometer for high sensitive glycerol sensor**” by **Zahra Khajemiri , Dukhyung Lee, Seyedeh Mehri Hamidi , and Dai-Sik Kim.**

A novel plasmonic interferometric sensor intended for application to biochemical sensing has been investigated experimentally and theoretically. The sensor was included a slit surrounded by rectangular grooves using a thick gold film. A three-dimensional finite difference time-domain commercial software package was applied to simulate the structure. The Focused ion beam milling has been used as a mean to fabricate series of rectangular plasmonic interferometer with varying slit-groove distance L. Oscillation behavior is shown by transmission spectra in a broadband wavelength range between 400 nm and 800 nm in the distance between slit and grooves. Red-shifted interference spectrum is the result of increasing refractive indices. The proposed structure is functional from visible to near-infrared wavelength range and yields a sensitivity of 4923 nm/RIU and a figure of merit as high as 214 at 729 nm wavelength. In conclusion, this study indicates the possibility of fabricating a low cost, compact, and real-time high-throughput plasmonic interferometer.

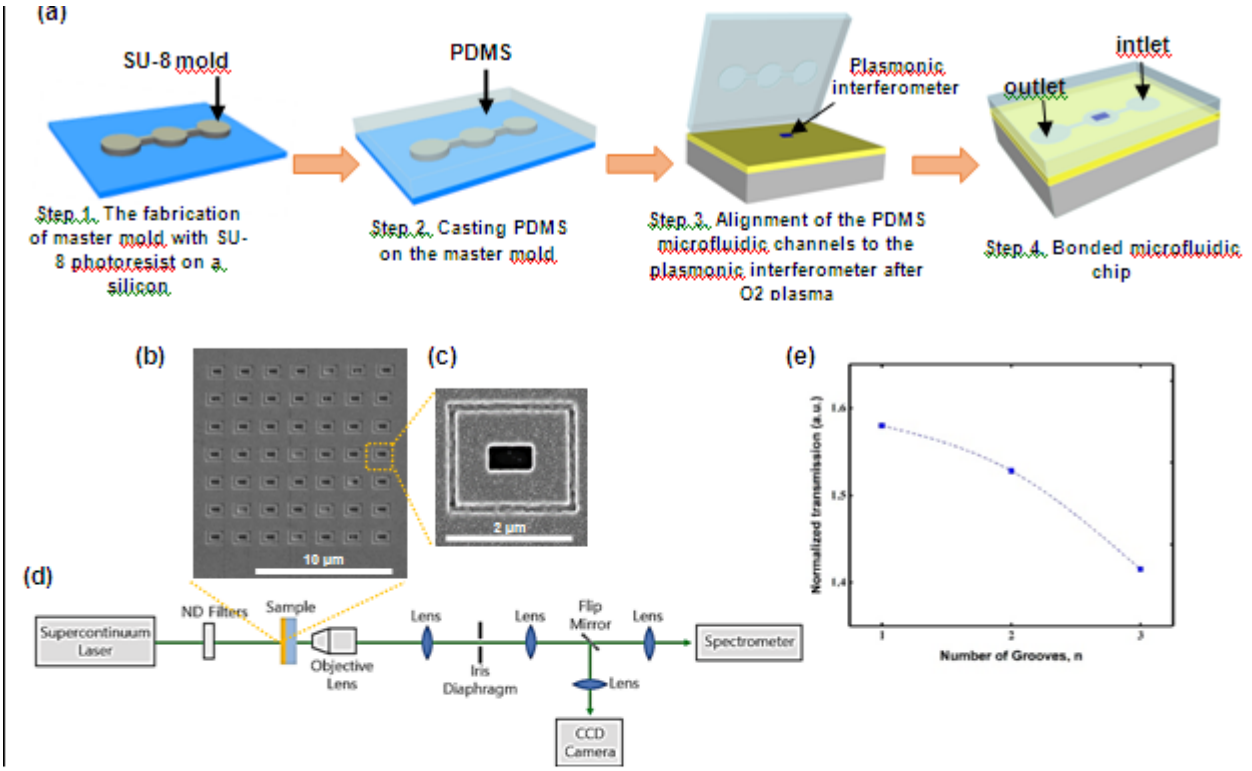

Figure 2. (**a**) Microfluidic fabrication process. (**b**) SEM image of the 7 × 7 fabricated plasmonic interferometer array. The center-to-center distance between each interferometer is 2 µm, and the sensor array footprint is 14 × 14 μm^2. Scale bar: 10 µm. (**c**) One of the interferometers .Scale bar: 2 µm. (**d**)The shematic of our measurement. (**e**) Normalized transmission as a function of number of grooves, 'n' at period of 200 nm for L= 850 nm.