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Realization of large transmitted optical Goos–Hänchen shifts in photonic crystal slabs

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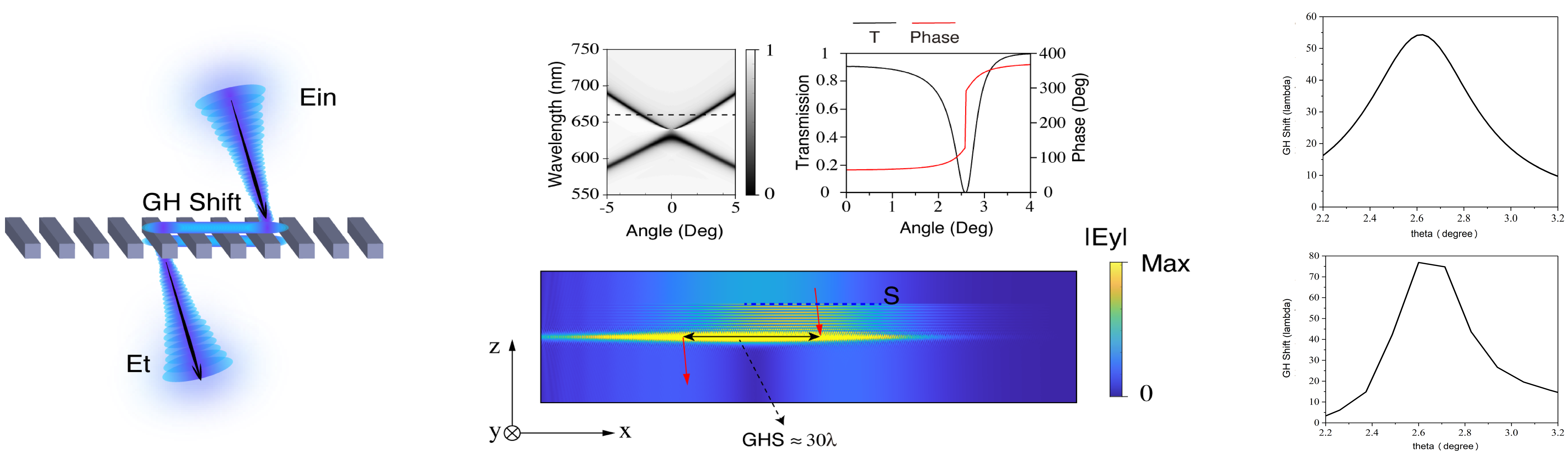
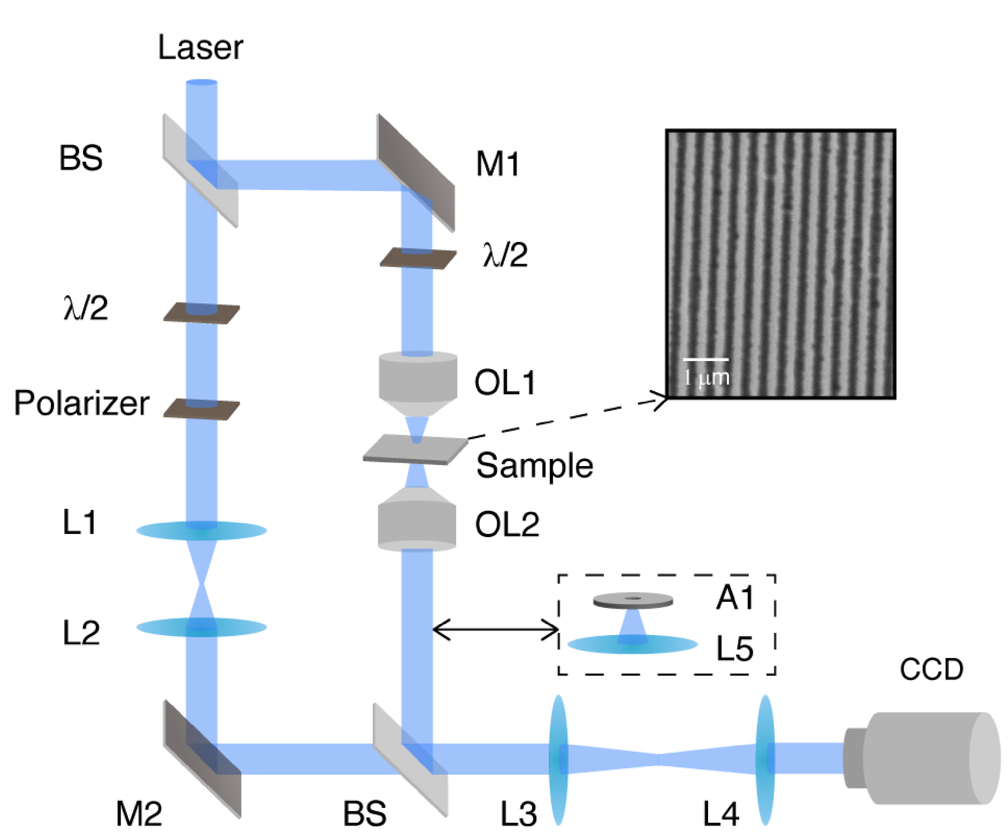
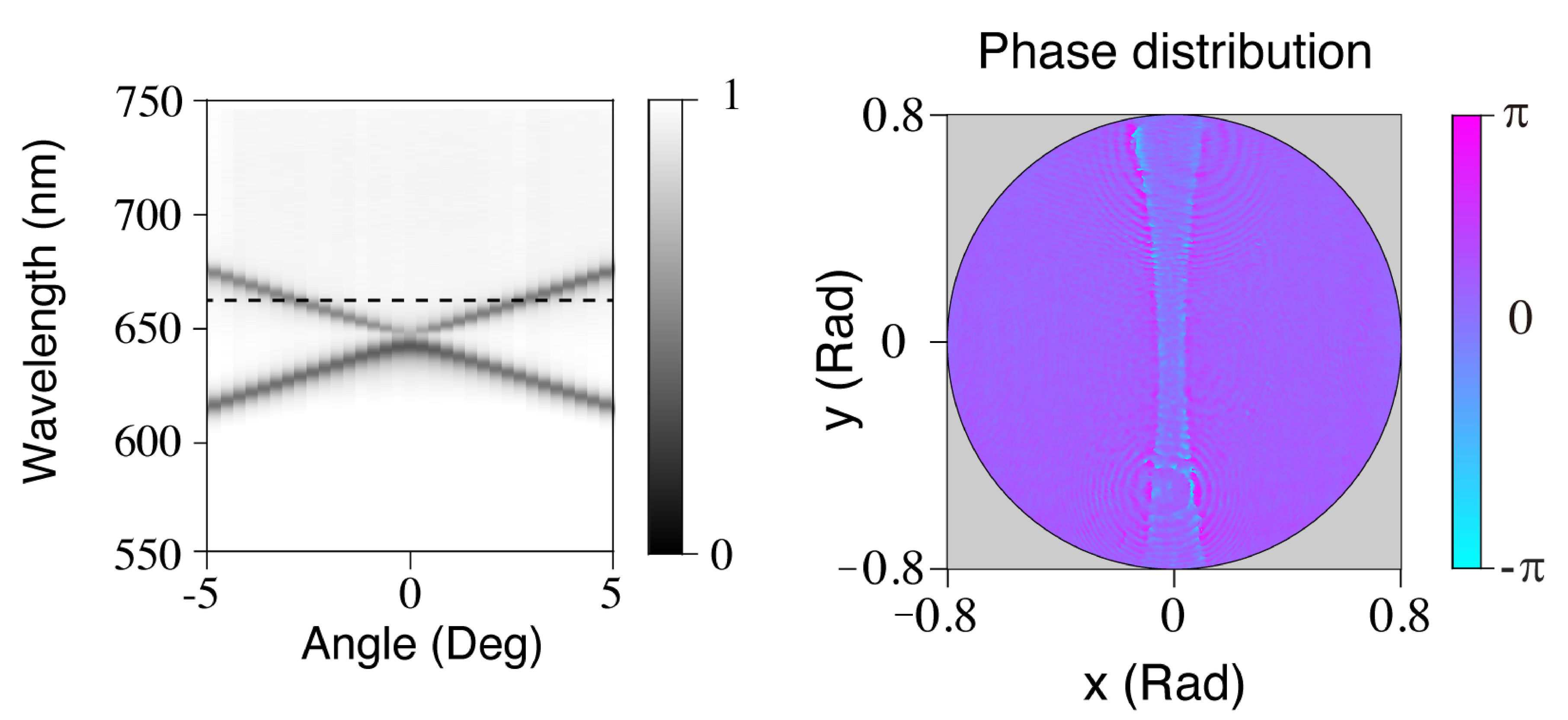


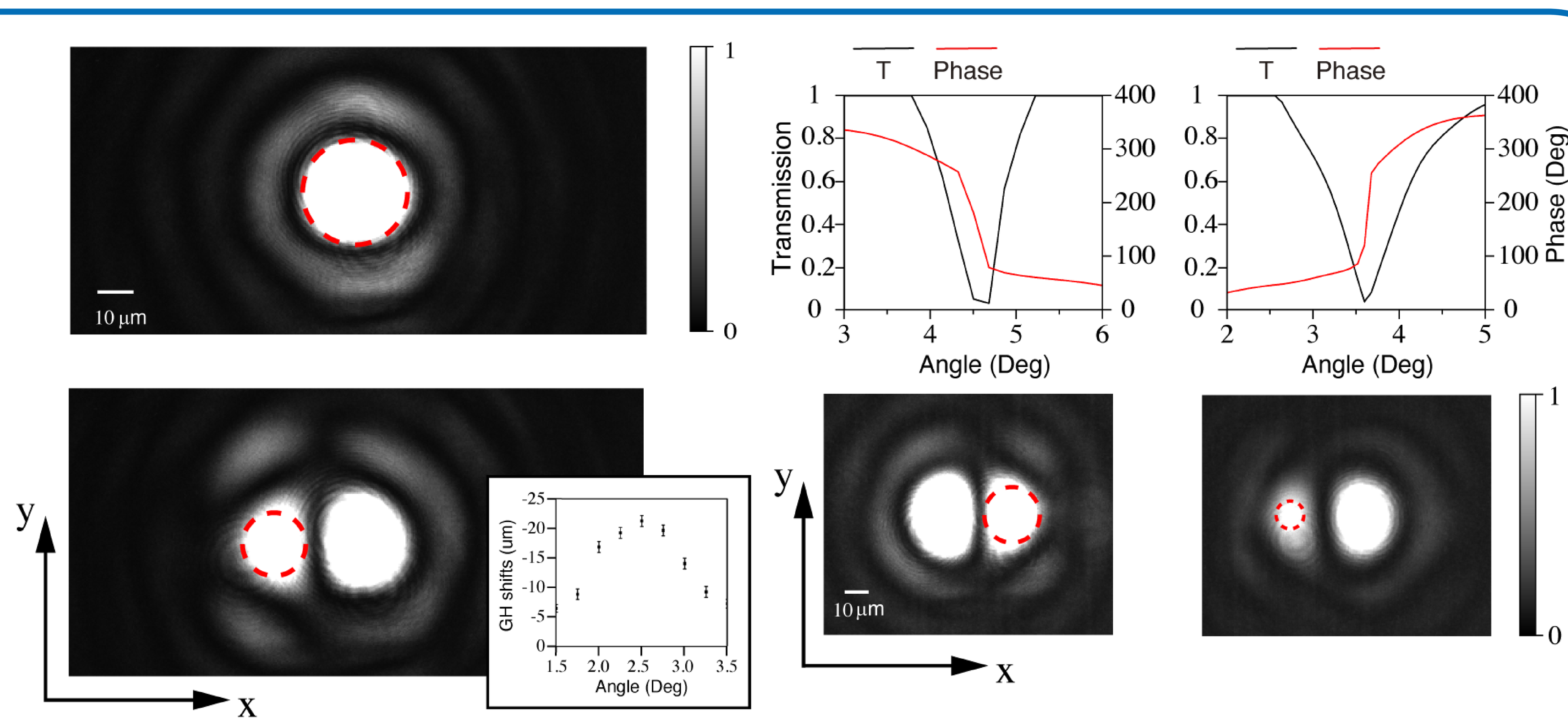
The transmitted optical Goos–Hänchen shift diagram and Simulated results: the transmittance spectra of the grating, transmission coefficient of the grating and phase of transmitted field at λ = 660 nm and the simulated electric field distributions of the GH shift.



Schematic diagram of the interferometric imaging phase measurement system and experimental setup



The measured angle-resolved transmittance spectra of the grating under TE-polarized incidence beam and measured phase distributions with TE- polarized incidence beam at λ = 660 nm induced by the sample.



The intensity distribution of the transmitted light beam measured experimentally.

Experimental results of the grating and phase of the transmitted field under TE-polarized incidence light at different wavelength.

Conclusion

We studied the transmitted optical GH shift in photonic crystal slabs theoretically and experimentally.

Measured the transmitted optical GH shift experimentally

With different dispersion of photonic crystal slabs, both positive and negative shifts can be achieved.

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