Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

All-Dielectric Magnetophotonic Gratings for Maximum TMOKE enhancement

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Supplementary Material

Hypothetical transmittance curves are plotted using the equation

$$T(\pm\Delta T) = T(\pm \boldsymbol{M}) = A + B\frac{(x - x_{\text{res}})^2}{\left(\frac{\Gamma}{2}\right)^2 + (x - x_{\text{res}})^2},$$

where the minimum transmittance $T_{\text{res}} = A$ is varied in the range $0 \leq T_{\text{res}} \leq 0.3$. $\Gamma = 0.5$ is the shape factor parameter, giving the full width at half maximum (FWHM). x_{res} represents the resonant point along the x-axis, which can be used for the incident angle or wavelength.

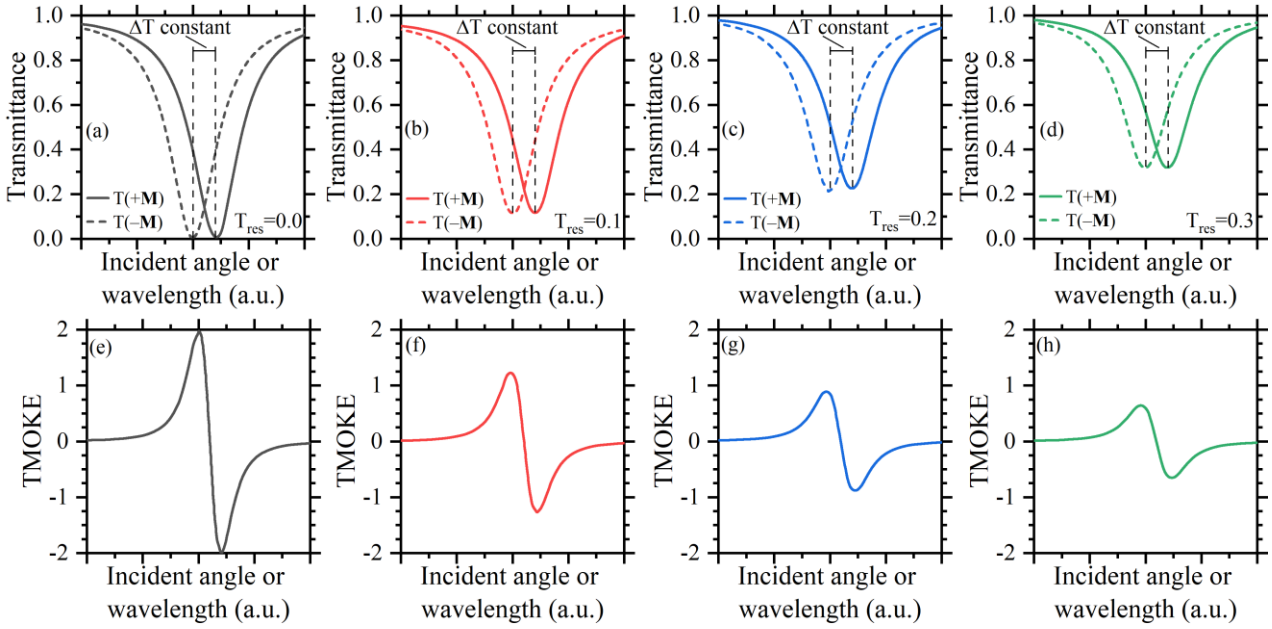

Figure S1: (a)–(d) Hypothetical values for T(+**M**) and T(–**M**) and their (e)–(h) TMOKE curves. ΔT_{res} is considered constant to show the effect of T_{res} on the TMOKE amplitudes.

The effect of ΔT_{res} on the TMOKE amplitude is shown in Figure S2. In particular, for high T_{res} it becomes evident the enhancement of TMOKE amplitudes by increasing the ΔT_{res} value, see Figures S2(g)–(h).

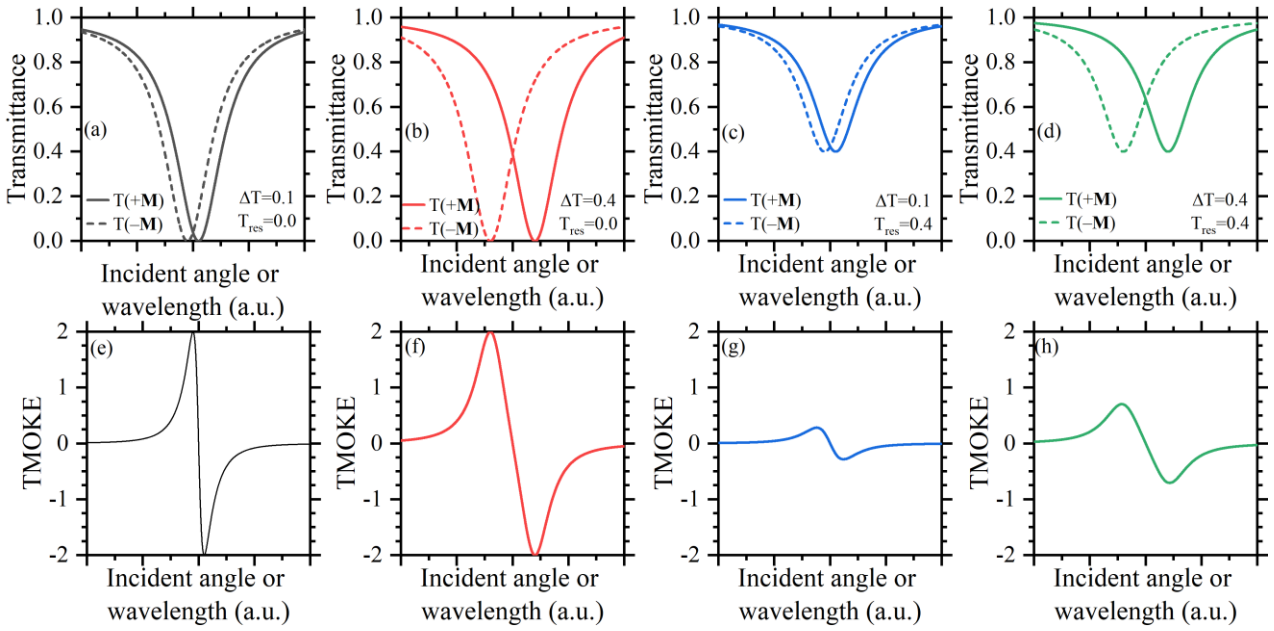

Figure S2: (a)–(d) T(+**M**) and T(–**M**) Hypothetical transmittance and (e)–(h) TMOKE curves. Comparative results are shown for the transmittance (TMOKE) in (a)–(b) [(e)–(f)] and (c)–(d) [(g)–(h)] with $T_{\mathrm{res}} = 0.0$ and 0.4, respectively. Results for the transmittance (TMOKE) using $\Delta T = 0.1$ are shown in (a) [(e)] and (c) [(g)], and for $\Delta T = 0.4$ in (b) [(f)] and (d) [(h)], as indicated in the insets.

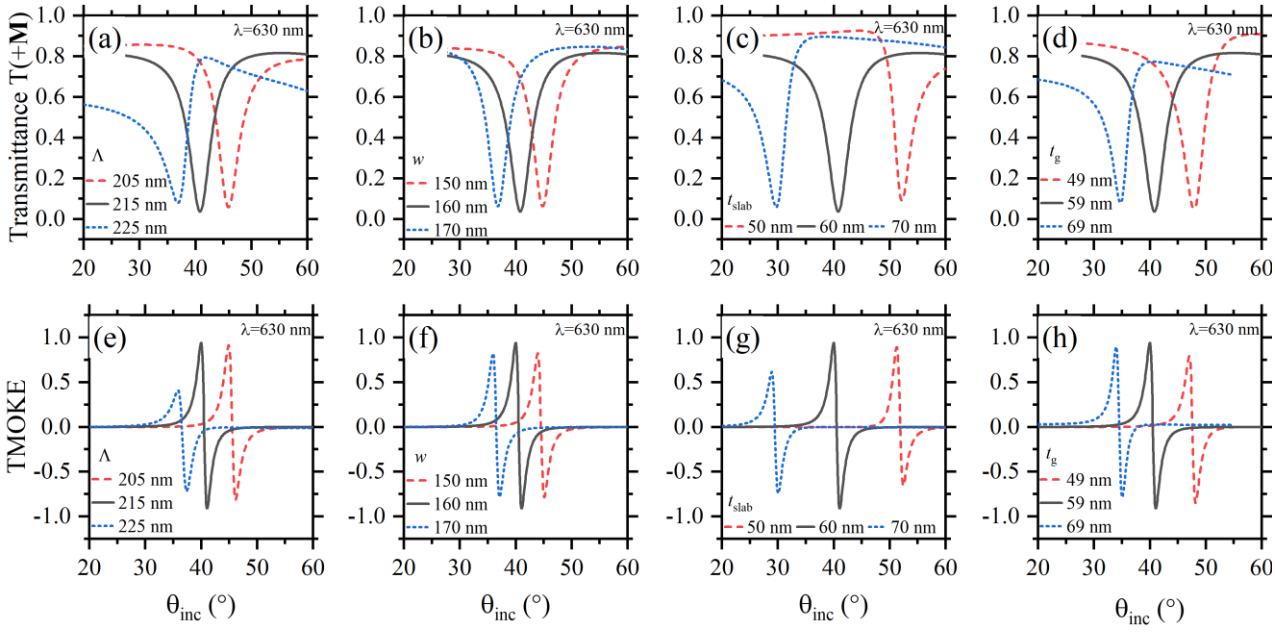

Figure S3: Geometrical optimization of the (a)–(d) Transmittances T(+**M**) and (e)–(h) TMOKE curves for the system Bi:YIG-Si, the incident wavelength is λ=630 nm.