

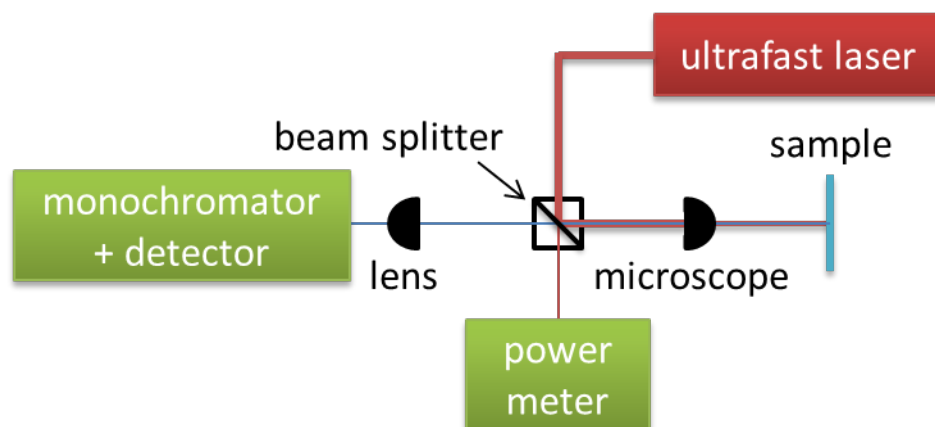


Figure SI1. Schematic of the experimental set-up for the SH experiments.

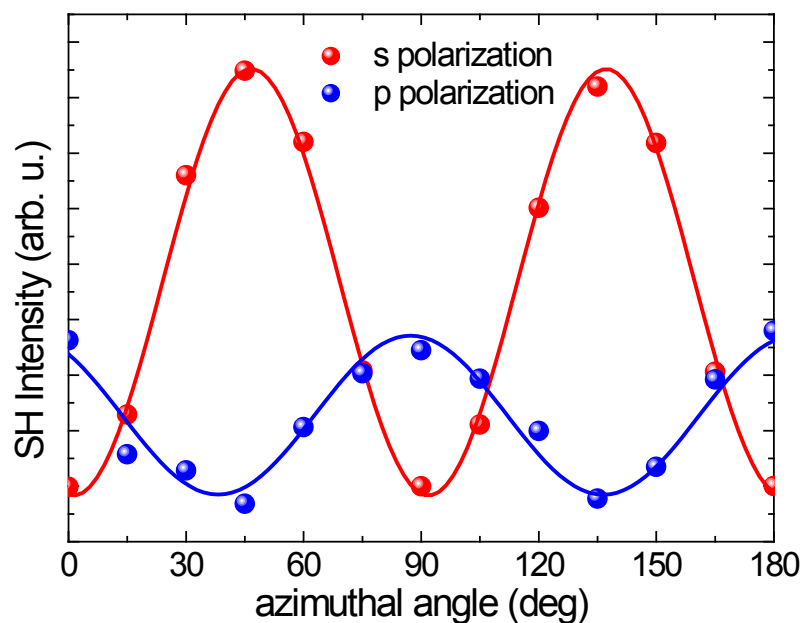


Figure SI2. Azimuthal dependence of the SHG from our (001)-oriented substrate by rotating the azimuthal angle (experimental conditions: 820 nm excitation wavelength, 20 mW pumping power, 82 MHz repetition rate). We show here our data for s (red dots) and p (blue dots) polarization. The continuous line are the best-fitting curves obtained by squared sine functions.