Nonlinear optical response in solids from generalized Kohn-Sham real-time TDDFT

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- Short- and long-range corrected non-local functionals allow balanced treatment of valence and core excitons
- Real time approach enables treatment of optical nonlinearities across near-IR to soft X-ray energy ranges
- Applications abound for describing pump-probe spectra and nonlinear response of excitonic systems.

Resonant SHG in monolayer h-BN

Transient XAS in h-BN

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