

Nonlinear Optics of Two-dimensional Layered Materials

Zhipei Sun

Yunyun Dai, Yadong Wang, Susobhan Das,
Anton Autere, and Yuchen Wang

Department of Electronics and
Nanoengineering, Aalto University, Finland

Zhipei.sun@aalto.fi

Abstract

Two-dimensional layered materials (2DLMs), such as graphene and transition metal dichalcogenide monolayers, have recently stimulated great interest [1], promising for ultrafast and broadband applications such as frequency conversion and ultrafast pulse generation [2,3]. Moreover, attributed to their unique properties (e.g., strong excitonic effect), 2DLMs show fascinating nonlinear optical properties [1,4]. Here, I will present our results on nonlinear optics with 2DLMs, including harmonic generation (Figure 1) [5-8] and wave-mixing [9]. Further, I will discuss our recent nonlinear optical advances in 2DLM-based hybrid structures (such as plasmon-2DLMs).

References

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Figures

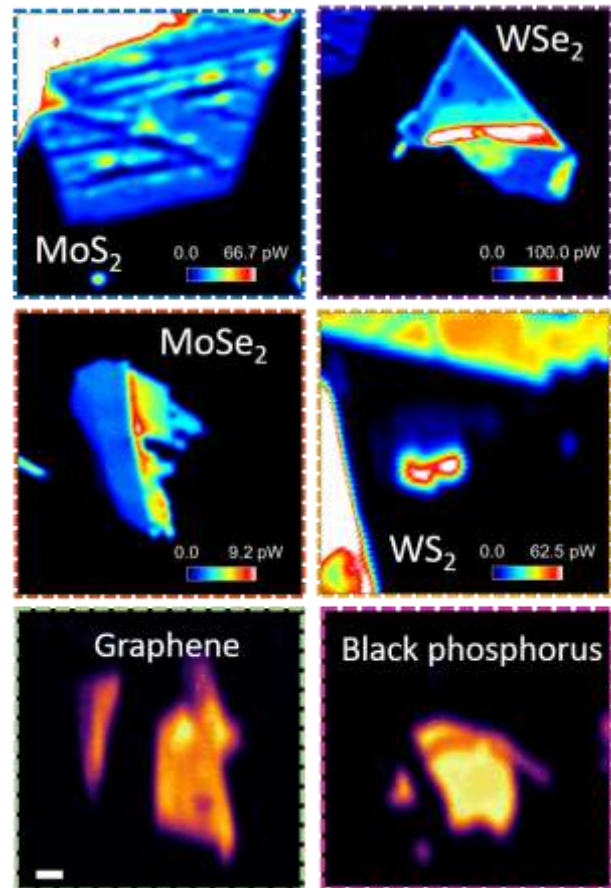


Figure 1: Third-harmonic generation images of different 2DLMs [1,7].