## Exceptional and Anisotropic Transport Properties of Photocarriers in Black Phosphorus

Jiaqi He, Dawei He, Yongsheng Wang, Qiannan Cui, Matthew Z. Bellus, Hsin-Ying Chiu, and Hui Zhao



Figure S1. Sample characterization by atomic force microscope. (a) Optical microscope image. The pink dashed lines indicate the boundary of the boron nitride layer. (b) Atomic force microscope image of one area of the sample indicated by the black box in (a). (c) Cross section indicated as the blue line in b, giving the thickness of the boron nitride layer of about 4 nm. (d) Cross section indicated as the red line in b, giving the total thickness of the BP flake and the boron nitride layer of 20 nm. The thickness of BP is 16 nm.



Figure S2. Differential reflection signal in early probe delays with different pump fluences. The red lines are single-exponential fits. The inset shows the decay constant deduced from the fits as a function of the pump fluence. No dependence on the pump fluence is seen within the uncertainty of the measurement.