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## Anomalous photovoltaic effect in a van der Waals heterostructure

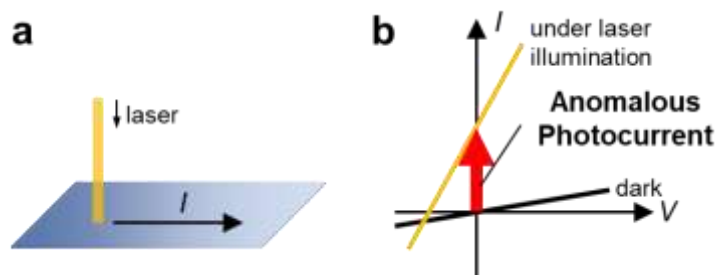
Van der Waals interfaces are important platforms for the novel properties or functionalities. So far, two dimensional crystals in van der Waals heterostructures have been used to obtain the high mobility two dimensional electron gas or as the building blocks for functional devices such as  $p$ - $n$  junction and tunneling junction. Nowadays, symmetry engineering by using the van der Waal interface is attracting much attention, represented by Moiré physics in twisted heterostructures [1] and pseudo Landau level formation at graphene/black phosphorus heterostructures [2].

In this presentation, we report the anomalous photovoltaic effect originating from symmetry breaking at the van der Waals interfaces. Potential microscopic mechanism will be also discussed.

### References

- [1] Yankowitz, M. et al., Nature Physics, 8 (2012) 382.
- [2] Liu, Y. et al., Nature Nanotechnology, 13 (2013) 828.

### Figures



**Figure 1:** **a**, Conceptual picture of anomalous photovoltaic effect. **b**, Definition of anomalous photocurrent; the current under zero bias by laser illumination.