# Control of exciton-phonon interaction in monolayer $WSe_2$

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## Abstract

Transition metal dichalcogenides (TMDs) form layered compounds [1], which recently came into the focus of vigorous research activity due to the various pathways to produce them in single- and few-layer form. Raman spectroscopy is a standard procedure in the characterization dimensionality of TMDs [2]. We study the three main Raman peaks of monolayer $WSe_2$ in a field effect transistor with polymer electrolyte gating, which offer a superior electrostatic control over the charge density in the channel. We find that positions, intensities and widths of these peaks change as a function of doping level due to exciton-phonon and electron-phonon interaction.

## Figures

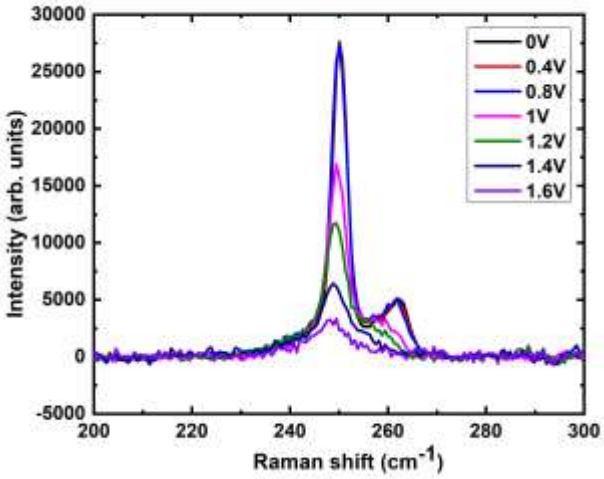


**Figure 1:** Evolution of Raman signal with voltage on electrolyte gate.

## References

[1] Mak, K. F., Lee, C., Hone, J., Shan, J., Heinz, T. F., Phys. Rev. Lett., 105 (2010) 136805.
[2] Li, H., Zhang, Q., Yap, C. C. R., Tay, B. K., Edwin, T. H. T., Olivier, A., Baillargeat D., Adv. Funct. Mater., 22 (2012)1385-1390.