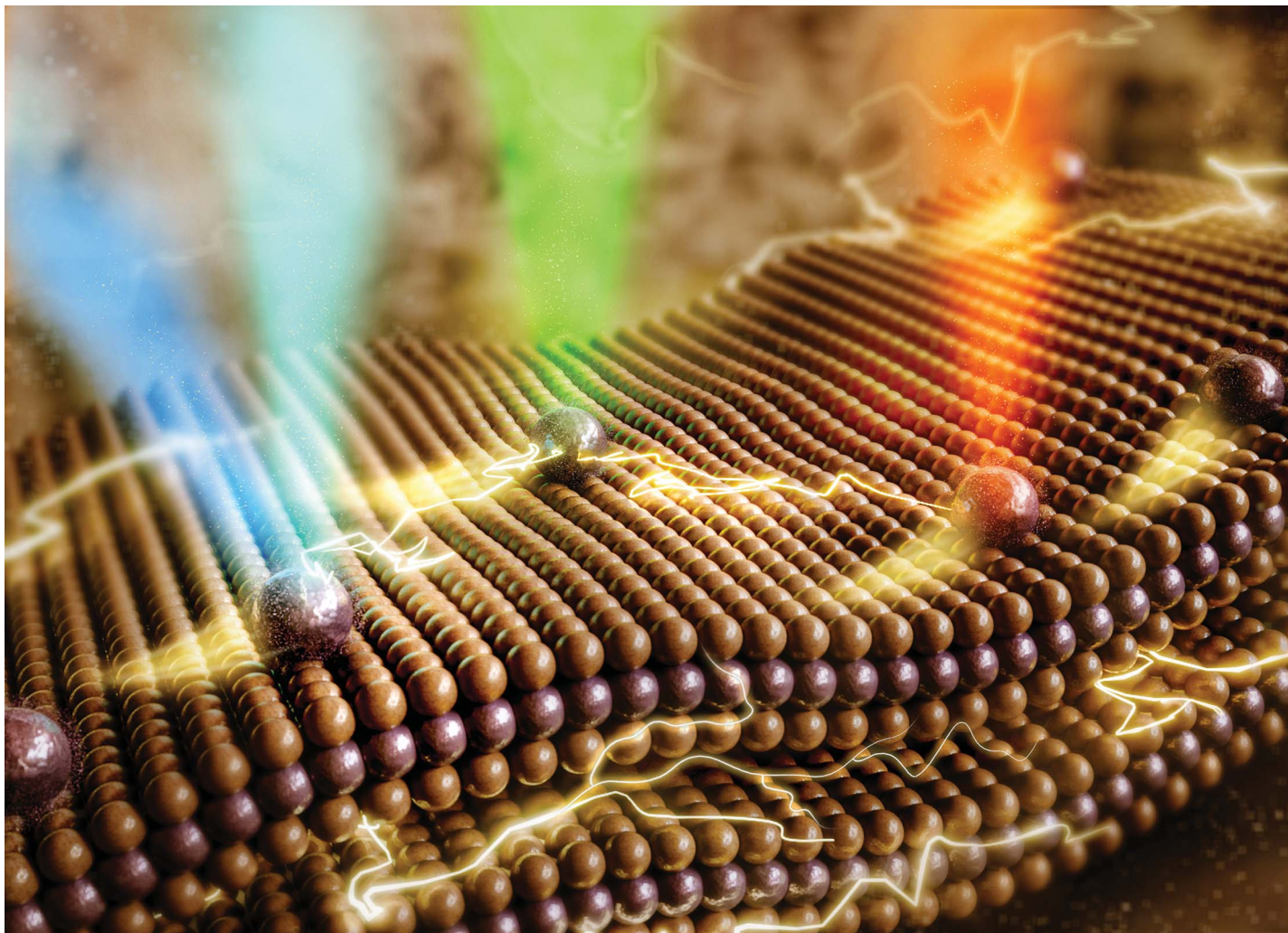


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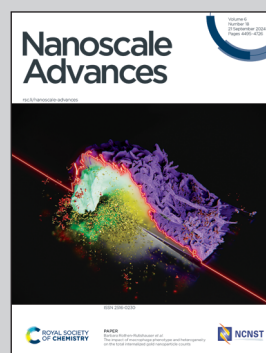


Showcasing research from Nanomaterials Spectroscopy and Imaging Group led by Dr Mirjana Dimitrievska at Swiss Federal Laboratories for Materials Science and Technology – Empa, Switzerland.

Unveiling the complex phonon nature and phonon cascades in 1L to 5L WSe₂ using multiwavelength excitation Raman scattering

Nanomaterials Spectroscopy and Imaging Group works on development of advanced Raman, photoluminescence and THz spectroscopy techniques for characterisation of new materials for optoelectronic applications. In this work, and in collaboration with the Laboratory of Semiconducting Materials at EPFL, Switzerland, we explore the complex phonon dynamics in WSe₂ mono- and multilayers, with particular emphasis on phonon-exciton interactions that lead to phonon cascades during the initial stages of carrier relaxation. This research provides a robust foundation and valuable reference for further studies of the vibrational properties of WSe₂, paving the way for its integration into novel optoelectronic and phononic devices.

As featured in:



See Mirjana Dimitrievska *et al.*,
Nanoscale Adv., 2024, 6, 4591.