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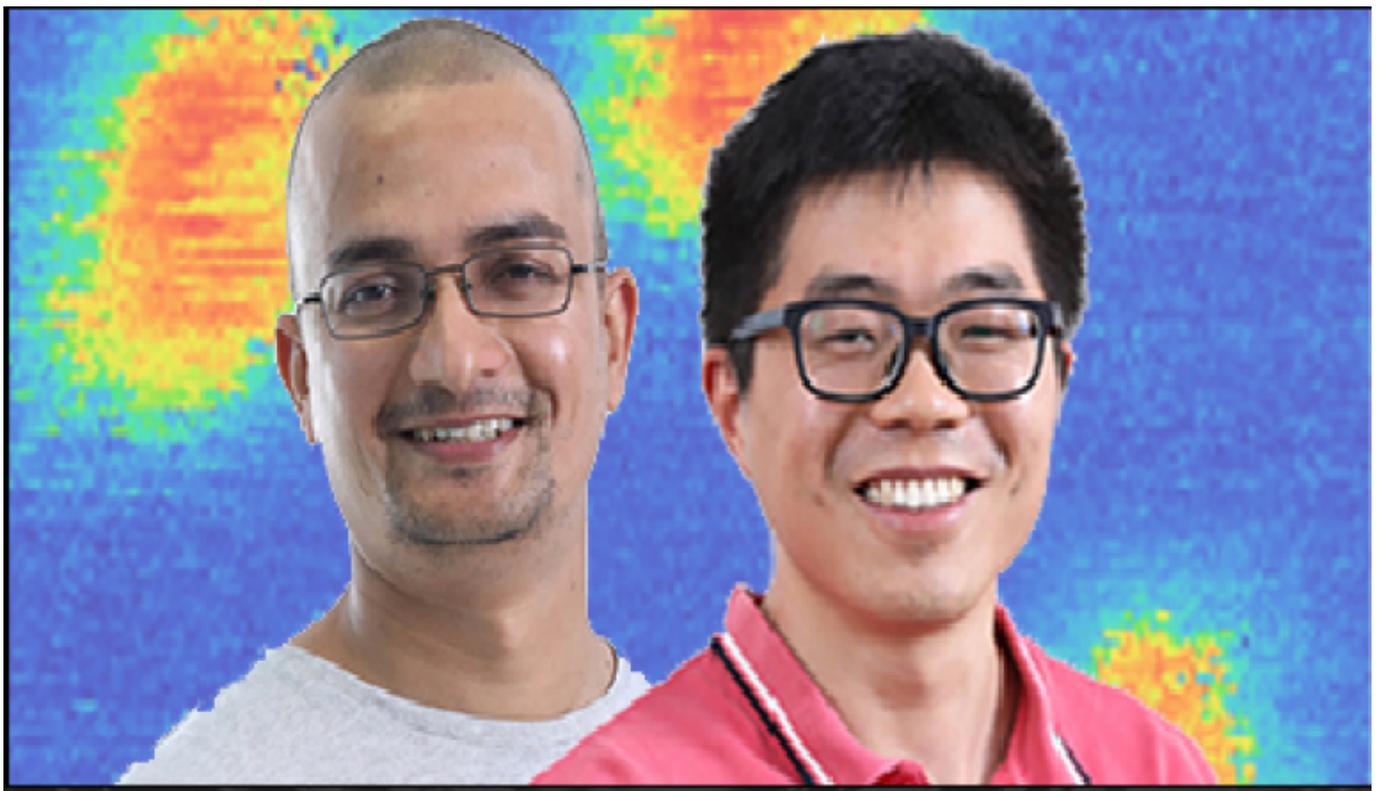


# First observation of native ferroelectric metal

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A UNSW study published over the weekend in Science Advances, is the first observation of a native ferroelectric metal, with potential for new nano-electronics applications.

The study represents the first example of a native metal with bistable and electrically switchable spontaneous polarization states – the hallmark of ferroelectricity.

“We found coexistence of native metallicity and ferroelectricity in bulk crystalline tungsten ditelluride (WTe<sub>2</sub>) at room temperature,” explains study author Dr Pankaj Sharma (School of Materials Science and Engineering, UNSW).

“We demonstrated that the ferroelectric state is switchable under an external electrical bias and explain the mechanism for ‘metallic ferroelectricity’ in WTe<sub>2</sub> through a systematic study of the crystal structure, electronic transport measurements and theoretical considerations.”

“A van der Waals material that is both metallic and ferroelectric in its bulk crystalline form at room temperature has potential for new nano-electronics applications,” says author Dr Feixiang Xiang (School of Physics).

The full story is here: