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Title:	Designing Ruthenium-Based Zig-Zag Nanowires as Electrocatalysts for Hydrogen Production
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Abstract:	Hydrogen is considered to be a viable and eco-friendly energy source that could substitute fossil fuels. However, one of the major hurdles in its widespread use is not finding an efficient method to produce it on a commercial scale. Water splitting through electrolysis shows a promising way to efficiently produce hydrogen, but it requires effective catalysts or electrocatalysts to work properly. Thus, developing affordable and reliable electrocatalysts is crucial for achieving efficient hydrogen production through water splitting that can be used in practical applications. For this, we have synthesized ultrathin zigzag RuS & RuCoS nanowires from the aqueous synthesis (advantageous in terms of the product's cost, convenience & environmental friendliness) with a thickness of approx. 2 nm and a RuCoS variant having low overpotential (131mV @ current density of -10mA cm <sup>-2</sup> ) for hydrogen evolution reaction (HER) in 0.5M H <sub>2</sub> SO <sub>4</sub> (with stability of 3600secs) is achieved which is comparable to the previously reported HER electrocatalysts.
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