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Magnetism and magnetic materials

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Magnetism is a fascinating physical phenomenon that is not yet completely understood. The magnetic properties of matter continue to inspire scientific curiosity and imagination, and magnetic materials dominate applications in key technologies ranging from high-performance magnets in motors and generators for large scale power generation, energy storage, and transmission, to magnetic information technologies on the nanoscale, such as storage, logic, and sensor devices using the concept of spintronics. The fundamental aspect of magnetism is the spin of the electron, and the various couplings of neighboring electron spins in a material leads to the diversity of ferromagnetic, ferrimagnetic, and antiferromagnetic, as well as paramagnetic and diamagnetic materials. Competing interactions in a magnetic materials lead to microscopic spin arrangements that impact properties, behaviour, and functionality of magnetic materials. Magnetization itself can be controlled or modified by external magnetic and electric fields, and even light, which opens a path to develop future microelectronics devices that will be ultrasmall, ultrafast, and foremost low-power. Those achievements will have significant technological, economic, environmental and societal impact in the upcoming era of Internet-of-Things (IoT). — show all

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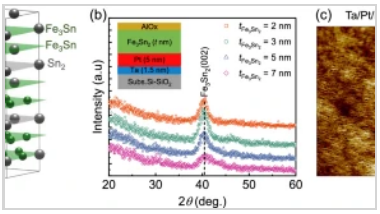

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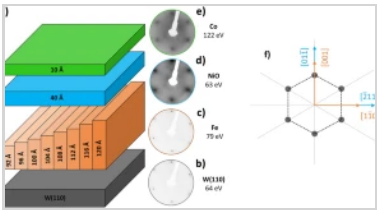

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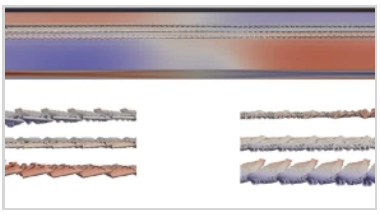

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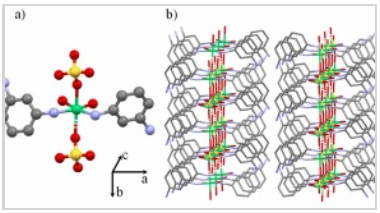

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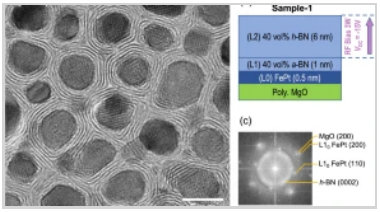

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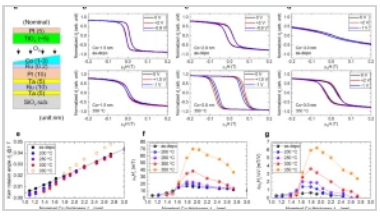

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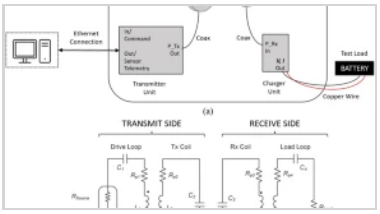

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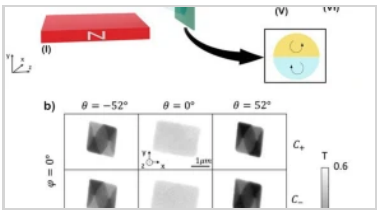

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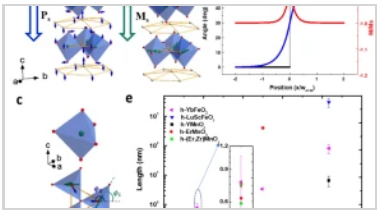

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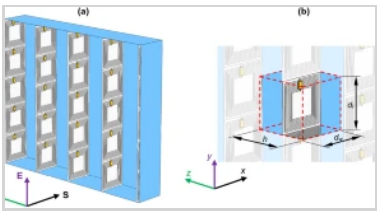

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