



## Electron's Spin: New way to develop efficient devices

**Timing:** 11:00 AM

**Date:** 29 December 2023

**Venue:** L16

**Speaker:** Prof. Rohit Medwal

**Abstract:** When we use our phones or laptops for a long time, have you ever noticed they can feel warm to touch? That warmth comes from something called "Joule heating" generated by moving electronic charge. Same phenomena is used in electronic heaters and to lighten up incandescent (old-fashioned) light bulbs. To overcome this short-coming we can use electron's another fundamental property called "spin". Similar to electric current which is the flow of electron charge, a flow of only electron's spin can be obtained which is in effect devoid of any moving charges.

In our talk, we'll dive deeper into what exactly this "spin" and spin current are and how scientists have learned to harness it. By doing so, they've come up with ways that can make our computers and other gadgets work more efficiently. Imagine having a device that doesn't get as hot and uses less energy, all thanks to understanding and using this electron spin!

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