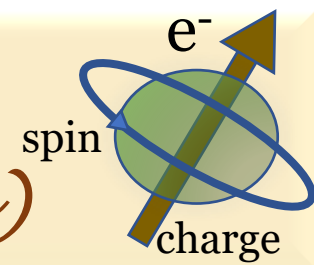




# W2S Seminar

(Webinar series on Spintronics)



## Spin Hall Nano-Oscillator based Neuromorphic Computing

Speaker:

Dr. Himanshu Fulara  
Department of Physics  
University of Gothenburg, Sweden

**Date and time:**  
**29.04.2021 at**  
**03.00 pm**  
**Via**  
**Zoom**

### Abstract

Spin Hall nano-oscillators (SHNOs) utilize pure spin current, produced by the spin Hall effect in a nonmagnetic metal, to drive nanoscopic regions of adjacent ferromagnetic thin film into auto-oscillating precession at microwave frequencies. Thanks to their easy nanofabrication process, wide frequency tunability, and highly nonlinear properties governing robust mutual synchronization in networks, SHNOs have recently emerged as an energy-efficient alternative to conventional spin-torque nano-oscillators. In this talk, I will discuss our recent demonstrations in nano-constriction based SHNOs that enable CMOS-compatible scaling path for high-quality microwave signal generation and ultra-fast oscillator-based neuromorphic computing schemes to much larger networks. These demonstrations also hold great promise for beyond-CMOS wave-based computing and faster signal processing schemes so-called magnonics.

If interested to attend then please visit <https://www.niser.ac.in/w2s-seminar/index.php>