

## SCIENTIFIC KEYNOTE SPEECH

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The development of Internet of Things (IOT) and Artificial Intelligence (AI) produces an ever increasing amount of Data that needs to be processed and stored. This leads to huge energy consumption: interconnected devices are expected to contribute to 20% of the world electricity consumption in 2025... and this is not sustainable!

We need to move toward ultra-low energy consumption for electronic for computing, data storage and sensors. Spintronic (Spin Electronic) can be the solution. Based on interface properties at the atomic scale this technology uses the electron spin to carry information and therefore reduces the energy dissipation due to joule heating. For instance researchers at Tohoku University have demonstrated a decrease of 97% to 99% of power consumption for several types of processors and memories. Moreover they have shown that thanks to the use of interface, less material can be used throughout the process.

### SPEAKER

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