

## **Materials development for lateral GaN power transistors with improved performances**

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Gallium nitride power switches have emerged in the industry to provide solutions to a wide range of power electronics applications. As part of the GaN4AP project, we are studying new materials that will impact device characteristics and allow us to go beyond the key figures of state-of-the-art GaN HEMTs (High Electron Mobility Transistors). In this presentation, we will first present how the optimization of the AlGa<sub>N</sub>/Ga<sub>N</sub> heterojunction allowed us to fabricate lateral GaN HEMTs with very low on-state resistance. We will then review the development of a new barrier material AlScN and highlight its advantages.