



**Aachen
Graphene &
2D-Materials
Center**

Aachen-Graphene Flagship-Seminar

November 26, 2019

at the Physikzentrum Melaten

11:30 - 12:00h in 28A301

IEEE Distinguished Lecture

CaF₂ Insulators for Ultrascaled 2D Field Effect Transistors

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Fabrication of ultrascaled 2D field effect transistors (FETs) requires 2D semiconductors with sizable bandgaps and high carrier mobilities as well as competitive insulators to separate the channel from the gate. However, so far the focus has been put on channel materials, while insulators suitable for ultrascaled 2D FETs have not been identified. We have recently demonstrated the feasibility of FETs with CaF₂ insulators and found that the virtually defect-free nature of CaF₂ leads to good performance, small hysteresis, and excellent reliability.