

## Hybrid quantum devices based on van-der-Waals materials

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### Abstract

In the last few years, there has been rapid progress in exploring emerging phenomena in atomically thin, so called van-der-Waals (vdW) materials and their heterostructures. Twisted 2D materials host electrically tunable correlated and topological states, making them of great interest for fundamental research and potential applications. [1,2] Integrating these novel quantum materials in technology platforms like superconducting microwave circuits (circuit QED) e.g. in the form of graphene Josephson junctions (gJJ), enables research on new qubit technology and quantum-limited amplifiers. [3,4] In this talk, I will present our approaches on fabricating these vdW materials-based hybrid devices in our facilities at the CHyN, including the clean room.

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### References

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