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## **【246】 Momentum-resolved electronic structure of a NbN/GaN superconductor/semiconductor heterojunction**

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Electronic structure of heterointerfaces plays a pivotal role in their device functionality. Recently, ultrathin films of superconducting NbN have been integrated by MBE with the semiconducting GaN. We use soft X-ray angle-resolved photoelectron spectroscopy (ARPES) to directly measure the momentum-resolved electronic structure and band offsets at this Schottky heterointerface as well as the band-bending profile into GaN. We support the experimental findings with first-principles calculations as well as transport and optical measurements. The Fermi states in NbN are found to align against the band gap in GaN, excluding any electronic cross-talk of the superconducting states in NbN to GaN. This finding opens prospects of integrating superconducting devices into semiconductor technology.

**Primary authors:** YU, Tianlun (Swiss Light Source, Paul Scherrer Institut); WRIGHT, John (Materials Science and Engineering, Cornell University); KHALSA, Guru (Materials Science and Engineering, Cornell University); PAMUK, Betül (Platform for the Accelerated Realization, Analysis, and Discovery of Interface Materials (PARADIM)); CHANG, Celesta S. (School of Applied and Engineering Physics, Cornell University); MATVEYEV, Yury (Photon Science, Deutsches Elektronen-Synchrotron DESY); SCHMITT, Thorsten (Swiss Light Source, Paul Scherrer Institut); MULLER, David A. (School of Applied and Engineering Physics, Cornell University); XING, Grace (Kavli Institute at Cornell for Nanoscale Science, Cornell University); FENG, Donglai (Advanced Materials Laboratory, State Key Laboratory of Surface Physics and Department of Physics, Fudan University); JENA, Debdeep (Kavli Institute at Cornell for Nanoscale Science, Cornell University); STROCOV, Vladimir N. (Swiss Light Source, Paul Scherrer Institut)

**Presenter:** STROCOV, Vladimir N. (Swiss Light Source, Paul Scherrer Institut)

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