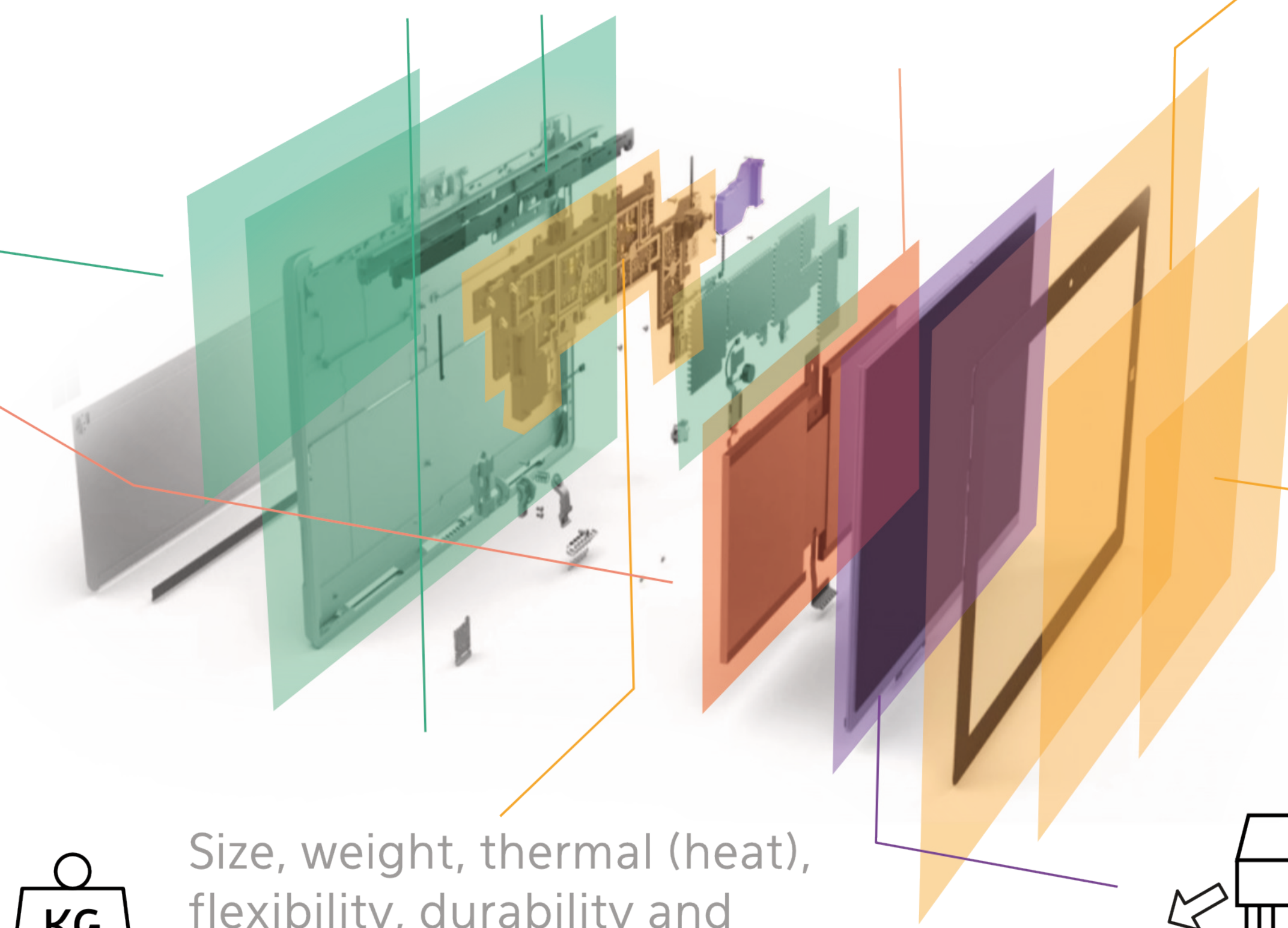




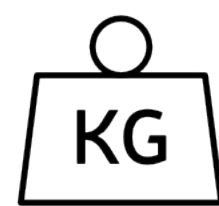
The best Boron Nitride for future 2D devices

Problems

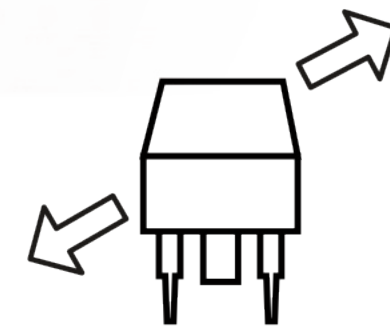
Si technology meets materials limit.



The present materials do not allow for the realization of new concepts.



Size, weight, thermal (heat), flexibility, durability and speed limitations of the current electronic devices.



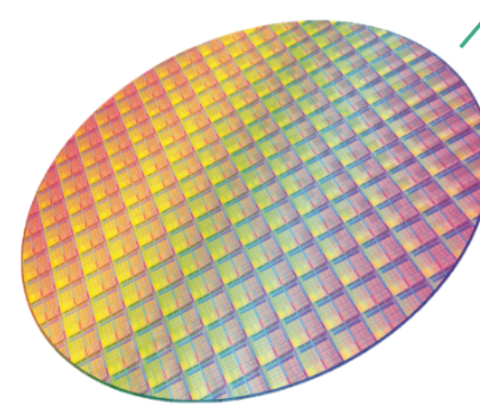
No good quality BN material that meets the industrial requirement of scalability is on the market.

Two-dimensional (2D) materials are expected to revolutionize the opportunities of micro- and nanodevices in fields of electronics, spintronics, plasmonics, photonics and nanofluidics.

Boron nitride (BN) appears to be "the" strategic key material in the field of 2D materials because of its unique properties:

- Chemical inertness makes it an ideal protection layer for all kind of devices from graphene, transition metal dichalcogenides to black phosphorus.
- Optical transparency makes it an ideal capping layer for photonic devices.
- Dielectric smoothness no trapped charge carriers like in SiO₂ makes it an optimal capping and dielectric insulator.
- 20 times better thermal conductivity comparing with SiO₂.

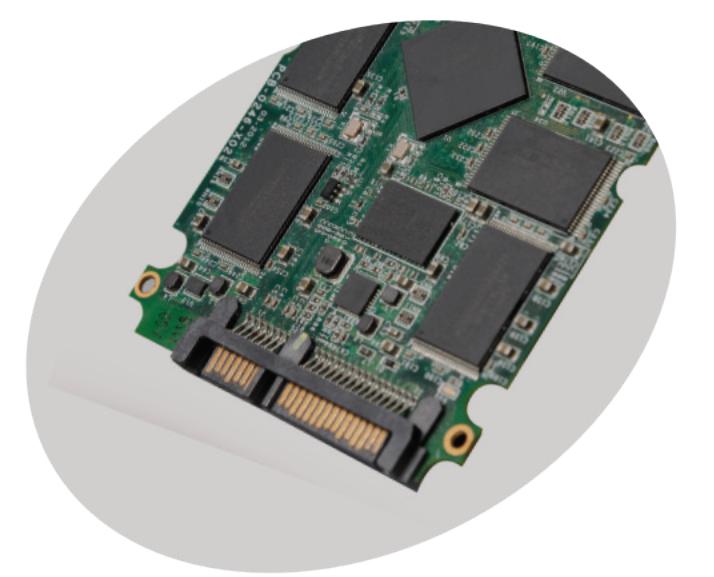
Solutions



We (Swiss BN) can fabricate high-quality BN with atomic precise thickness at wafer scale for fast 2D electronics.



With our BN materials, new electronic devices will be realized and existing devices will become faster, smaller and lighter.



Our high-quality BN materials could e.g. solve the heat dissipation issues and provide high durability of electronic devices, such as storage devices (SSD).

Image, Exploded Microsoft Surface Pro 3, www.appfutura.com

Team: Huanyao Cun, Adrian Hemmi and Thomas Greber

Contact: hycun1@physik.uzh.ch