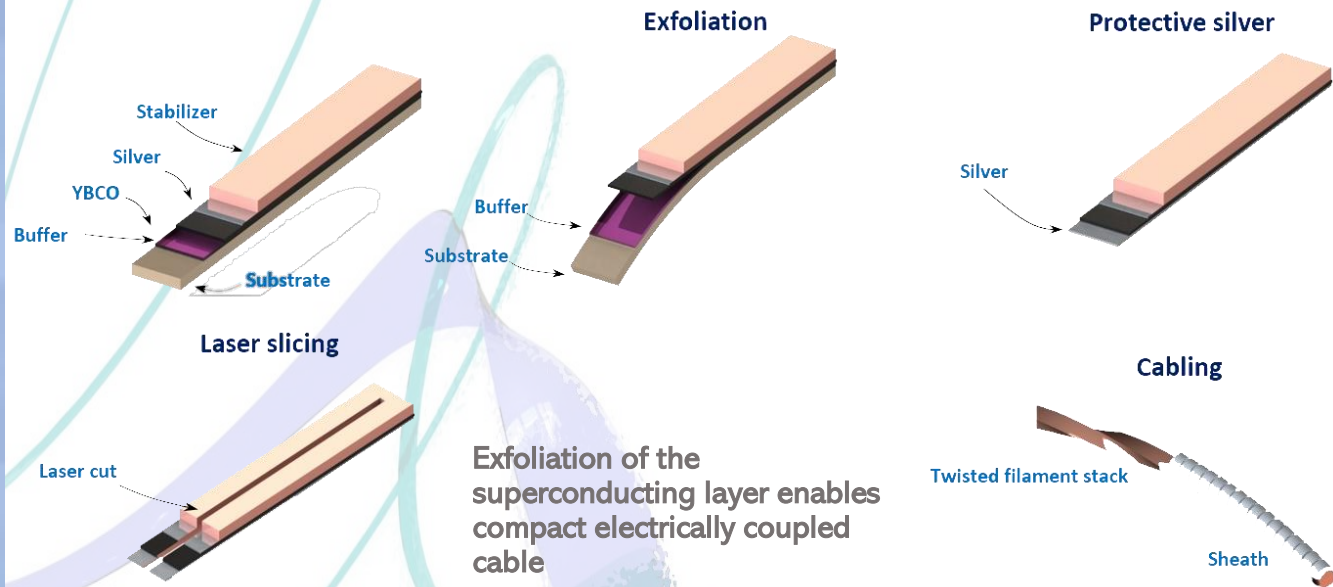


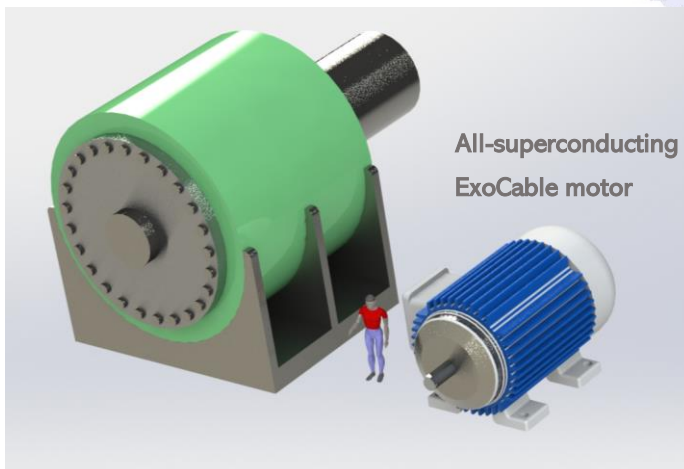
Brookhaven Technology Group

ExoCable™ high-temperature superconducting cable for energy, medical and defense applications



Markets

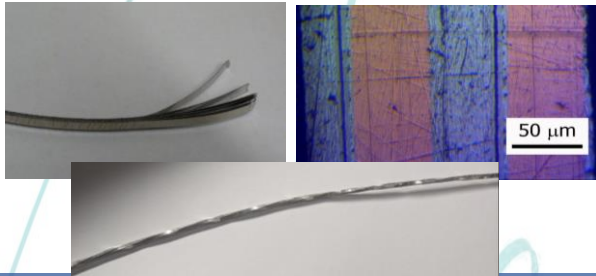
Permanent magnet motor



- All-superconducting motors and generators
- Gantries for proton therapy, medical cyclotrons
- Accelerators and fusion reactors
- NMR inserts

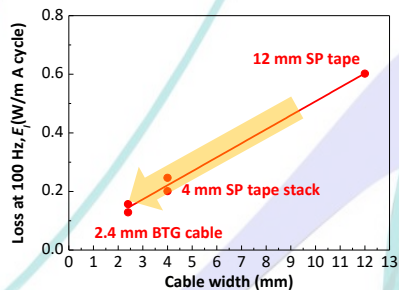
ExoCable™ advantage

Compact high-current cable



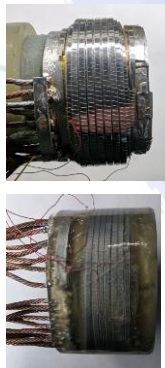
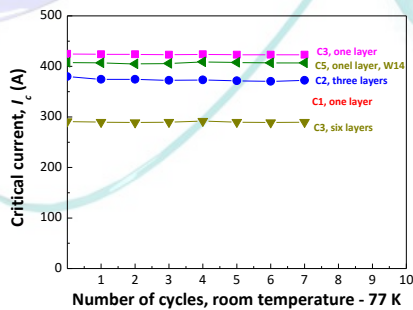
- Up to 1,000 A at 77 K for 2.4 mm cable and 200 A for 1 mm cable
- Tensile strength \approx 400 MPa
- Bend radius 5 mm

Reduced magnetization loss, strong electrical coupling



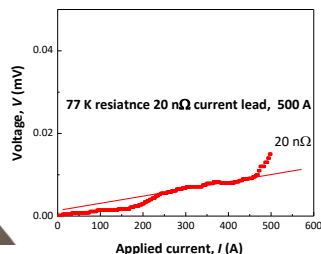
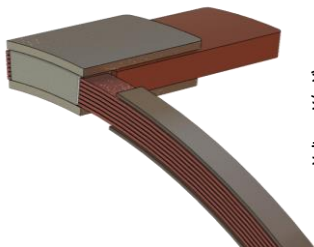
- x5 reduction of the AC loss at 0.6 Tesla
- x4 smaller trapped field compared to traditional pancake coil
- Short current transfer length: below 5 mm

Layer-wound coils compatible with low-viscosity epoxy impregnation



- The cable allows for layer winding with 20 mm bending radius
- The coils can be impregnated with low-viscosity $<$ 300 cP epoxies
- Repeated thermal cycling to 77 K and 22 K without any degradation
- Suitable for conduction cooling operation

Simplified lead and splice design



- Low-resistance, 10 nΩ/cm length compact current leads can be made without separating the filaments
- Both sides of the filament have the same low surface resistance