

# Short and mid-term prospects of HTS conductors in high-field split magnets for neutron scattering

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HTS materials have gradually become a serious option for high-field user magnets in the last few years. Solenoid magnets including HTS inserts and operating above the 23 T limit are routinely used in a few facilities for NMR experiments among others. Standalone HTS magnets with lower operating fields but featuring high availability have also become commercially available, especially using 1<sup>st</sup> generation HTS conductors.

We will present the performance gains that could be achieved by upgrading existing and well-proven split magnet designs in the 15 T field range with present day HTS magnet technology i.e. using REBCO 2<sup>nd</sup> generation coated conductors. We will then discuss the challenges raised by such an LTS-HTS integration, especially in terms of cryogenic stability and thus operability.

We will then present the possibilities offered by full-HTS alternatives while considering different cryogenic approaches. We will discuss what exists and what has to be developed in the next years to help a new generation of 20 T-class HTS user split magnets becomes a reality at a neutron facility.