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## Meeting Divergent Expectations: Superconductors between Industrial Applications & Cutting-Edge Science

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For over 40 years metallic superconductors have been an industrialized product, serving primarily the medical and science communities' needs for high performance magnets. The last decade has seen a rapid divergence between the requirements of these two user communities. Superconductor use in medical diagnostics, analytics and treatment is well established. Cost and reliable high-volume supply are the most important considerations for this industry. On the other hand, the science community continues to explore the limits of superconductor performance, conceiving ever larger and cyclical projects to push the boundaries of human knowledge. This divergence creates increasing difficulties for the superconductor industry to meet both challenges equally. Bruker is an integrated manufacturer of superconductors and superconducting magnets, as well as fully integrated analytical and research systems. As part of the manufacturer and user communities, we are in a unique position to share insights into requirements, as well as our approach to address the needs of both science and industry.

How much can the user communities benefit from each other? How do we leverage insights for one community into advances for the other? The talk will explain that these opportunities have indeed diminished. Superconductor manufacturers have to increasingly tailor their value proposition to fit the needs of a specific user or user community. Performance requirements have diverged. Product life cycles are shorter. All the while, both communities insist on ever decreasing cost, faster innovation and higher flexibility. The superconductor industry has seen two consolidation waves in the last decade alone, because of the underlying mismatch between expectations and capabilities of user communities and manufacturers. It is Bruker's mission to ensure that both affordable and high performance superconductors remain available to the largest possible user base. That requires an understanding of the underlying economics, which this talk aims to achieve.

### Submitters Country

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