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Designing heterostructures – a route towards new superconductors[1]

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By now it has become technologically feasible to grow controllably transition metal oxides layer by layer. In effect, the achieved progress allows to design heterostructures with optimized electronic properties. The talk will specifically address scenarios for interface superconductivity and the possibility to raise the transition temperature of bulk superconductors by layer design. Heterostructures offer a complexity beyond that of bulk materials. The nature of the superconducting states formed in layered materials and at interfaces is a fascinating topic of recent research which will be in the focus of this presentation.

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