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## Focus of Jefferson Laboratory's Collins Cryogenic Institute Research and Development

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Recognized as a key core laboratory technology, Jefferson Lab established the Collins Cryogenic Institute in 2006 to complement its other research areas inclusive of SRF technology. Combining graduate engineering degree thesis work with applied research and development of helium refrigeration technology, the Institute's focus areas include improved process cycles, higher system efficiencies (lower utility requirements), lower capital equipment cost, higher reliability, and lower maintenance. In collaborative partnership with research laboratories, industry, national programs, and educational institutions, the collaborations includes a wide range of helium plant capacities, applications and temperatures. Special attention is paid to development of solutions to current technical problems and future applications that can not be addressed by a single organization due to the lack of R+D funding or technology base in specific areas. This includes solutions for energy and helium gas conservation to curb ever increasing utility and helium costs and preservation of natural resources. An overview of the range of the current research and development activities conducted by the institute, along with findings, will be presented.

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