

Abstract Submitted
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Apparatus for creating quantum degenerate gas of Lithium-6
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Georgia Inst of Tech — We describe our apparatus for generation of quantum degenerate gas of lithium-6, a fermion, for further study and simulation of quantum and condensed matter systems. We designed and constructed a modified Bitter type electromagnet and control system which can provide both homogeneous and quadrupole magnetic fields in different current configurations. We are assembling an ultra-high vacuum system for trapping and cooling the lithium atoms and performing experiments. Unique features of the system include an internal radiofrequency antenna and 21-directional optical access to the main chamber. The laser system will be described separately. Progress and a roadmap to degenerate Fermi gases will be outlined.

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