

Abstract Submitted
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Source for a Temperature-Controlled Metal Cluster Beam WEI JIANG, FORREST PAYNE, LOUIS BLOOMFIELD — Metal clusters can be produced easily by laser vaporization of a sample into an inert cooling gas. We have used a pulsed Nd:YAG laser to evaporate cobalt from a rotating rod into a 20cm-long narrow pipe filled with helium gas, injected by a pulsed gas valve. The outgoing part of the pipe (15cm long) is attached to a helium refrigerator and an electrical heater, which allow us to control the pipe's temperature over the range from 60K to room temperature. If the gas-cluster mixture stays in the pipe long enough before supersonic expansion, it reaches thermal equilibrium with the pipe.

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