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Bulk Quantities of Noble Gas Nanoclusters with Five-Fold Symmetry Stabilized in Superfulid Helium V. KIRYUKHIN, Rutgers Univ, E.P. BERNARD, V.V. KHMELENKO, R.E. BOLTNEV, D.M. LEE, Cornell Univ., N.V. KRAINYUKOVA, Inst. Low Temp. Phys., Kharkov, Ukraine — Bulk quantities (volume$\sim$cm^3, atomic density$\sim$10^{19}-10^{20} cm^{-3}) of noble gas nanoclusters (size$\sim$5-6 nm) were produced in superfluid helium by injection technique. X-ray diffraction measurements show that the samples consist of weakly interacting nanoclusters with five-fold symmetry axes, such as icosahedra and decahedra. These results open new opportunities for fundamental research of nanoclusters of noble gases and other materials in well-controlled environments using experimental techniques requiring bulk samples.

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