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Structure of solid metal ammonia systems[1] XUE WANG, C. A. BURNS, D. HOOGERHEIDE, C. N. KODITUWAKKU, Dept. of Physics, Western Michigan University, Kalamazoo MI 49008 — Both crystalline and amorphous phases in metal ammonia solids have been studied using x-ray scattering. We have studied the structure of $Li(NH_3)_4$ over a temperature range of 10 K to 90 K and also studied the structure of quenched sodium-ammonia solutions at concentrations of 0, 3, 6, 9, 12, and 15 mole percent metal. We find a mixture of amorphous and crystalline phases in lithium-ammonia with at least two different crystalline phases. An amorphous phase is also found in certain of the quenched sodium-ammonia solutions.

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