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journal or publication title	Science reports of the Research Institutes, Tohoku University. Ser. A, Physics, chemistry and metallurgy
volume	15
page range	52-52
year	1963
URL	http://hdl.handle.net/10097/27116

Electron Diffraction Study on CuAu at Temperatures Above the Transition Point of Order-Disorder*

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Abstract

Using a high temperature electron diffraction camera and thin oriented, evaporated films, the structure of CuAu has been investigated mainly at temperatures above the transition point of order-disorder. When the temperature exceeds the transition point, strong superlattice reflections of CuAu (II) vanish and weak, diffuse maxima appear at superlattice reflection positions, those at $\{110\}$ positions showing peculiar shape characteristic of anti-phase domains, over the temperature range of about 50°C above the transition point. It is inferred that short chains of domains with the anti-phase character which is the same as the character in CuAu (II) but much more degenerate than this are present sporadically in the lattice in the equilibrium state in this temperature range.

* The 1080th report of the Research Institute for Iron, Steel and Other Metals. Published in the Journal of the Physical Society of Japan, **17** (1952), 1647.

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