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Vacancy Ordering in Vanadium Carbides Based on V_6C_5 *

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*The Research Institute for Iron, Steel and Other Metals***Abstract**

The ordered arrangement of carbon vacancies in vanadium carbides near V_6C_5 has been analysed by means of selected-area electron diffraction and high-voltage electron microscopy. A new type of ordered distribution of carbon vacancies is found at non-stoichiometric compositions between V_6C_5 and V_8C_7 . This structure can be expressed as a long-period structure consisting of the enantiomorphic domains based on the structure V_6C_5 which was determined by Billingham, Bell and Lewis (1972). The periodic domain boundaries with spacing eleven times the nearest-neighbour interatomic distance are directly observed by electron microscopy.

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