

As a preparation for the study of dispersed particles in the aluminium alloys the ALCHEMI method was tested on a simple model material. This method combines the X-ray spectrum analysis and the dynamic diffraction to provide the information on site occupancies. The site preference of Cr in the Fe<sub>3</sub>Al and FeAl materials was studied. Measured variation of the X-ray yields with the orientation near the Bragg position was fitted by the calculated curves. We found that 70 resp. 80 % of Cr occupy the Al sublattice.