

# Surface Features of Binary Fe<sub>100-x</sub>Cr<sub>x</sub> (1 ≤ x ≤ 50) Alloys

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**Abstract.** Materials microstructure determines their physical and chemical properties. These attributes must be studied especially in the case of stainless high-chromium steels that are used as a basic material for construction of reactor pressure vessels or other components of nuclear power plants or fusion reactors. Chromium has anti-corrosion properties because of formation of surface segregation and passivation layer. There are many nuclear physics techniques suitable for microstructure analysis and diagnostics of steels, which yield information from material surface. We used Scanning Electron Microscopy and Atomic Force Microscopy for description of sample surfaces. The obtained results will be useful in studies of the microstructure in different types of construction stainless steels.