

High-Temperature Studies of the Structure and Molar Volume of Metallic Alloys by Using Electromagnetic Levitation and Synchrotron X-ray Diffraction

Ivan Kaban^{1, S, C}

*¹Leibniz Institute for Solid State and Materials Research Dresden, Dresden, Germany
i.kaban@ifw-dresden.de*

Measurements of the structure and properties of metals and alloys by using standard experimental techniques are usually hampered at elevated temperatures due to chemical reactions between probe and container. A combination of the electromagnetic levitation and high-energy X-ray diffraction enables to overcome this problem. In this contribution examples of the structural studies carried out on Ni-based alloys in solid and liquid state at the German Electron Synchrotron DESY Hamburg will be presented. Particularly, the relationship between atomic structure and molar volume and its temperature dependence will be discussed.