



Contribution ID: 28

Type: **Poster**

Battery and materials research at the diffractometer STRESS-SPEC at FRM II

Tuesday 19 July 2016 16:50 (2h 40m)

At the German neutron source Heinz Maier-Leibnitz (FRM II) the diffractometer STRESS-SPEC is the dedicated instrument to tackle problems in the field of engineering and applied materials science. Modern materials science spans a wide field of scientific areas including the analysis of residual stresses, characterisation of textures and in-situ phase analysis of high performance alloys. More recently the possibility to perform spatial and time resolved diffraction has increased the interest in battery research at STRESS-SPEC. However, the different science topics require flexibility of the instrument setup. Consequently in order to address all these applications the instrument was designed to offer always a good compromise between flux and resolution for the respective measurement problem [1].

Several examples of measurements performed at STRESS-SPEC are shown in the following as a selective overview to demonstrate the wide range of possible energy related materials science applications.

[1] M. Hofmann, W.M. Gan, J. Rebelo-Kornmeier and M. Schöbel, Neutron News 24(3) (2013) 14-17.

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Session Classification: Poster Session

Track Classification: Energy storage & transformation