



Pozvánka na seminár

Ústavu experimentálnej fyziky

SAV, v. v. i.



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„Development of functional thin films: magic art or solid science?“

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Anotácia:

During the last decades, physical vapor deposition of thin films and coatings has grown to a family of mature technologies, enabling synthesis of novel materials for a huge range of applications. Tailoring of complex coating materials [1] was supported by a tremendous progress in design approaches as well as sophisticated characterization techniques [2], providing the key for the knowledge-based development of thin films with unique properties. Within this talk, a short overview on research activities performed at Montanuniversität Leoben will be given, spanning the range of hard coatings for cutting tools [3] via thin films for microelectronics and displays [4] to the activation of surfaces for energy conversion and storage [5]. Two examples from ongoing scientific theses will be showcased in more detail, i.e. the development of AgNbO_3 perovskite thin films to be used as dielectric capacitors for electrical energy storage [6] and research on high entropy alloy thin films with potential application as hydrogen permeation barriers.

References:

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- [2] M. Tkadletz, N. Schalk, R. Daniel, J. Keckes, C. Czettl, C. Mitterer, *Surf. Coat. Technol.* 285 (2016) 31-45.
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- [4] M.J. Cordill, P. Kreiml, C. Mitterer, *Materials* 15 (2022) 926.
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- [6] L. Kölbl, C. Mitterer, R. Franz, *Vacuum* 2013 (2023) 112077.

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