

**Annotations of Doctoral Thesis Topics for Degree Course in
“Nanotechnology and Advanced Materials”
for the Academic Years since 2019/2020**

Topic: Preparation and characterization of nanocomposite thin films for polymer electronics

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Annotation:

The work will be focused on preparation of thin films from conductive and semiconductive polymers doped by addition of nanoparticles with the aim of modification of electronic properties of obtained thin films. Electronic devices will be prepared from these materials and will be tested by spectroscopic and electric measurement methods available at the TBU.

Requirements:

Knowledge of general and macromolecular chemistry and physics at the university level. Good knowledge of the English language or a potential to the improvement. Basic manual and laboratory work skills. Ability to work independently.

Literature:

1. URBÁNEK, Pavel, KUŘITKA, Ivo, DANIŠ, Stanislav, TOUŠKOVÁ, Jana, TOUŠEK, Jiří. Thickness threshold of structural ordering in thin MEH-PPV films. *Polymer*, 2014, roč. 55, č. 16, s. 4050-4056. ISSN 0032-3861.
2. SCHAUER, František, KUŘITKA, Ivo, NADAZDY, V, GMUCOVA, K, WEIS, M, ROHOVEC, Jan, TOUSEK, Jiří, TOUŠOVÁ, Eva, LANYI, S. Charge Transient, Electrochemical and Impedance Measurements as Tools for Characterization of Nano-Heterostructural Organic/Inorganic Semiconductors. *Nanoscience and Nanotechnology Letters*, 2013, roč. 5, č. 4, s. 439-443. ISSN 1941-4900.
3. TERJE A. SKOTHEIM, JOHN R. REYNOLDS *Conjugated polymers: theory, synthesis, properties, and characterization*. Boca Raton : CRC Press, 2007.