

Dissertation review

Tomas Bata University in Zlin, Centre of Polymer Systems

Title: Preparation and Characterization of Nanocomposite Thin Films for Polymer Electronics

Student: Bitá Ghasemi

Written by Prof. Ing. Petr Slobodian, Ph.D.

The doctoral thesis titled "Preparation and Characterization of Nanocomposite Thin Films for Polymer Electronics" by Bitá Ghasemi from Tomas Bata University presents a thorough investigation into the optoelectronic characteristics and structural properties of nanocomposite thin films for polymer electronics. The study explores the influence of nanofiller addition on the performance of polymer-based electronic devices, focusing on charge transport mechanisms and structural disorder.

The dissertation contains a relevant introduction to the issue. It also contains citations of published articles and other forms of presentation of results, a work contribution for society, future prospects, a student's biography and other expected appendices. The thesis is written in English, it is logically arranged and in an appropriate structure, grammatically correct and nearly without errors. Furthermore, the student fulfilled other study obligations and passed the state exam. Through his own publication activity, he fulfilled the relevant directive for the defense the doctoral thesis.

I would like to add four questions to the student.

1. The study mentions a critical thickness threshold around 100 nm in various aspects of the films. Could you discuss the significance of this threshold and its implications for the nano- to microscale transition in polymer thin films?
2. Figure 42, what do the dashed lines represent here?
3. Can you describe what we actually see in the photograph Figure 44.

4. Can you elaborate on the observed changes in device performance, such as reduction in maximum luminance and current efficiency, following nanofiller addition, and discuss potential strategies for mitigating these effects while maintaining device stability?

According above, I recommend the above thesis to be defended by the examination committee and after a positive vote, I recommend the award of Bitā Ghasemi received the Ph.D.

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