

## **Review Report of Supervisor on Diploma Thesis of MSc. Nicholas Ebukolo**

MSc. Nicholas Ebukolo prepared a diploma thesis on "*Self-crosslinking film-forming latexes prepared using sunflower oil-based monomer*". This diploma thesis deals with the study of styrene-acrylate latexes using keto-hydrazide crosslinking, in the synthesis of which a different content of an acrylate derivative of sunflower oil and various types of anionic emulsifier were used.

MSc. Nicholas Ebukolo approached the assigned thesis topic conscientiously and responsibly. I appreciate the ambition, hard work, and humility, with which the student could complete this diploma thesis quickly. I also appreciate his bold attitude and ability to learn new skills. In the literature survey, MSc. Nicholas Ebukolo focused on issues related to the given topic. The presented research of the available literature is processed clearly and comprehensibly. However, the discussion and interpretation of the obtained results are marked by time constraints, which was reflected in the quality of the processing of some passages which often do not contain an appropriate graphic presentation of the data and their more extensive interpretation. In some cases, there is also a lack of inference of connections between the described phenomena.

However, I can state that the assignment of the diploma thesis was fulfilled. Stable film-forming latexes were developed. During their synthesis, a significant proportion of traditional petroleum monomers was replaced by a bio-monomer from sunflower oil. At the same time, modern keto-hydrazide self-crosslinking was introduced into latex compositions to obtain increased protective properties of coatings, which makes these materials promising products for paint applications. For this reason, I believe that valuable results have been achieved within the presented diploma thesis, which is important not only for future research activities at the Institute of Chemistry and Technology of Macromolecular Materials but can also contribute to the development of knowledge in the industrial sector of water-borne polymer dispersions.

Based on the above-mentioned facts, I recommend the thesis of MSc. Nicholas Ebukolo for the defense and I rate it with a classification grade

„B“ .

In Pardubice 25.5. 2024

doc. Ing. Jana Machotová, Ph.D.