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Biologie und Chemie
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To whom it may concern

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Reference report on the bachelor study Program in specialty 161 "Chemical Technologies and Engineering" at the Department of Chemical Technology of Igor Sikorsky Kyiv Polytechnic Institute

Over the past 5 years, several students and researchers from Kyiv Polytechnic Institute (KPI) have visited our institute with the support of the European Union's Erasmus Plus program, the German Academic Exchange Service (DAAD), the Liebig College and the Alexander von Humboldt Program. Most of the visits proved to be very productive, both scientifically and personally. Our colleagues from Kyiv make a visible contribution to the further internationalization process of Justus Liebig University in Giessen.

The Department of Chemical Technology at the KPI approached me with a request to evaluate the above-mentioned bachelor study program. After a detailed analysis of the current situation at KPI, I confirm the high level of training of students and researchers at KPI, as well as their competence in various areas of modern chemistry and chemical technology, which is attributable to a well-structured and balanced education. In addition to the generally positive assessment of the key performance indicators, I also requested a detailed description of the educational program for the specialty 161 "Chemical Technology and Engineering" at the Department of Chemical Engineering (hereinafter referred to as the "Program").

The Program is divided into three categories, namely "Mandatory components of the general training cycle" (Cycle A), " Mandatory components of the professional training cycle" (Cycle B) and " Elective components of the general training cycle" (Cycle C). From Cycle C onwards, students must choose their own subjects to obtain the required number of credits. In my opinion, the subjects studied are well balanced and cover all the necessary aspects of modern chemistry and chemical technology. Thus, they are also fully consistent with the name of the program.

However, in my opinion, some of the subjects from Cycle A should be replaced. The subjects "Industrial ecology" and "General theory of development" should be transferred to Cycle C and

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replaced by subjects which are of decisive importance for modern technologies, such as, for example, "General trends in chemical technology". At the same time, I was very impressed by the wide range of subjects covered in Cycles B and C. Cycle B includes the necessary educational components for the professional training of a modern specialist in the field of chemistry and chemical technology. In contrast, Cycle C provides students with ample opportunities for personal development and expansion of knowledge not only in related fields. Furthermore, it also allows important insights beyond the horizon.

Taking this impressive curriculum into account, I conclude that the list of subjects in the bachelor program is well aligned with modern educational concepts and meets the high level of the faculty's teaching staff. This is fully consistent with the leading role of the KPI Department of Chemical Technology in Ukrainian chemical science and education. In addition, future graduates will also be sought-after employees outside Ukraine in many areas of chemical technology and engineering.

Prof. Dr. Gerd Hamscher