

Hundred-Year Anniversary – A Reason to Analyze University/Industry Interface

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Throughout the most of human history, only naturally occurring materials were available. Progress in civilization can be measured by advances in the development of materials. Today, we have a wide variety of materials that did not exist 100 years ago, particularly polymers that resulted from chemical engineering efforts to improve the quality of life.

Production of new materials for the progressive technological branches and involvement of biotechnologies corresponding to the laws of living matter are among prerequisites for gradual overtaking of technologically most developed countries. This was one of the reasons for the re-establishment of the Faculty of Chemistry at the Brno University of Technology, in 1992, with the aim that its graduates should meet the demands of entering the third millennium.

The re-building of the Faculty has proceeded since 1992 parallel with the far-reaching economic transformation and restructuring of the whole society. That is why the fundamental conceptual document, *i.e.* the report for the accreditation procedure, took into account a very careful analysis not only of the number of applicants but mainly of the potential labour market and use of graduates, as well as of the requirements of industries which produce and use chemical products and, last but not least, of the intellectual potential of the Brno region.

Unfortunately, for many people, the word “chemical” (as in “chemical” engineer and “chemical” industry) conjures up images of hazardous materials, the pollution of our environment and nothing more. This perception of “chemical” presents a serious obstacle to any real understanding of environmental issues related to our industries and to honestly evaluating solutions.

During the past year, we have had the opportunity to read and hear about wonderful things that have been, and are continuing to be, done by chemical engineers, contributions to so many areas of concern and solutions of so many of our problems.

For example, chemical engineers' contributions to material engineering:

- research on polymers that resist high temperatures has developed lightweight synthetic fabrics that protect people in heavy industry and our firefighters,
- modern fabrics for athletic clothing permit water vapour from perspiration to escape, while repelling water from rain or snow,
- lightweight plastic bottles for carbonated beverages are being fabricated with extrusion technology that combines different polymers into a multilayer film which provides necessary physical strength, while preventing loss of CO₂,
- advanced polymer films that bar oxygen, moisture, and carbon dioxide are increasingly being used to preserve food,
- new polymers are replacing metals, resulting in cars that are lighter and more fuel efficient,
- new type medicines that serve to human society in many directions,
- *etc.*

The development of the mentioned and other materials commodities has been finished on the basis of excellent co-operation of industry and university in the field of education and research as well. Among the compelling arguments in support of entrepreneurial relations between faculties and industry are:

- improved access by faculty and students to cutting-edge technology, especially in scientific and technical areas, which cannot be developed internally because of current institutional financial constraints,
- increased faculty awareness to “real world” problems,
- enhanced institutional revenue by the commercialization of faculty research discoveries,
- access to industry personnel, which can be used to augment their “teaching faculty” ,
- to improve intellectual potential on both sides of the interface “University/Industry” ,

- presumed improved stature and funding for state-supported institutions that demonstrate a positive connection between institutional research activities and the state economy.

The detailed analysis of our cooperation and a present status of the Faculty of Chemistry, Brno University of Technology, in the past six years and for the future must be done. From the history should be taken knowledge which makes possible the realistic orientation of the faculty body.

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