

Editorial

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Product Engineering is an essential component in engineering training. The jobs in the Chemical Engineering sector have been evolving from commodities production to product development, particularly in countries such as Portugal, where the scale of production is more adapted to customized or medium-sized series than mass production. So, in 2009, the Master's in Chemical Engineering Programme at the Faculty of Engineering of the University of Porto (FEUP) started a course on Product Engineering. In 2022, a special issue in the U.Porto Journal of Engineering was published, which included a series of selected works developed within the Product Engineering course at FEUP (Silva et al. 2022). The same methodology for product development laid in four cornerstones was kept in this course:

1. Identification of market NEEDS;
2. Coming up with several technical solutions to meet those NEEDS (IDEAS);
3. The process of screening a small set of the best IDEAS (SELECTION);
4. The study of the implementation of IDEAS considers time to market, industrial process design, regulation, Intellectual Property Rights, and economic analysis (MANUFACTURE).

In the last edition of the Product Engineering course (2023-24), integrated process simulation tools, namely Super Pro Designer and ASPEN, were used by the students. This enabled the students to apply know-how acquired during the Chemical Engineering course and to obtain a more accurate design of the processes and CAPEX and OPEX estimation. Thus, this second Special Issue includes some of the works already incorporating this new feature.

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