

Preparing the next generation of chemical engineers for the transition to net zero/circular economy

The importance of addressing climate change impact of our daily activities continues to dominate the societal and engineering challenges we are currently facing. The war in Ukraine brought into sharp focus the reliance of Europe on Russian gas as well as the necessity to ensure secure supply of sustainable energy for our needs. Chemical engineers play an important role in developing safe, sustainable and economically viable solutions to the acute need to transition to net zero/circular economy. But are our degree programmes preparing the graduates sufficiently for this important role? This contribution will explore the relevance of current ways of educating future chemical engineers to equip them with the necessary knowledge and skills for the period of transition. An additional challenge facing the future practicing chemical engineers is the increasing digitalisation of the industry. There are frequent references relating to the chemical engineering students as digital natives or generation Z, assuming they are readily adapting to technological developments. However, the need for understanding the power and the limitations of the digital tools in the design and operation of chemical and process plants cannot be underestimated. An example of incorporating such understanding into the existing undergraduate chemical engineering curriculum will also be presented.