

# Process Systems Engineering from an industrial and academic perspective

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## Summary

Process Systems Engineering (PSE) deals with methods and tools to support decision-making for the creation and operation of chemical supply chains, including the discovery, design, manufacturing, processing, and distribution of chemical products. In other words, PSE is about educated decision-making, at all levels and (size/time) scales, by understanding complex systems using a holistic view. This lecture aims to provide an informative industrial and academic perspective on PSE, from a personal viewpoint of the author – a seasoned professional with more than 20 years of combined industrial and academic experience. The main topics covered include: brief history, PSE in academic education vs industrial needs, PSE research vs industrial projects, personal perspectives, lessons learned in industry, global challenges and trends, professional skills, role and opportunities for PSE.

## References

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## Short CV

Tony Kiss is a professor and chair in chemical engineering at The University of Manchester, and a *Royal Society Wolfson Research Merit Award* holder. His early passion for chemistry led him to win several awards at Olympiads and to become member of the National Chemistry Olympic Team. He holds an MSc degree in Chemical Engineering from the Babes-Bolyai University of Cluj-Napoca, where he graduated as the best student and also worked for several years as teaching assistant. Afterwards, he successfully earned a PhD at the University of Amsterdam (UvA). He worked as PostDoc fellow at DeltChemTech (TU Delft) on PSE projects, and then again as PostDoc at UvA focusing on catalysis. Tony has over a decade of industrial experience, working as Senior Project Manager/Leader + RD&I Specialist in Separation Technology at AkzoNobel – Research, Development & Innovation (RD&I).



Next to his industrial role, he was also appointed as part-time professor of Separation Technology at University of Twente, in the Sustainable Process Technology group. During the past decade, he carried out many research & industrial projects, supervised graduation projects, published several textbooks, book chapters, and over 100 scientific articles. For the pioneering work and remarkable achievements in his area of scientific research, he was rewarded in 2013 with the *Hoogewerff Jongerenprijs* – a very prestigious award recognizing the most promising young scientist in The Netherlands. He also led his team to receive in 2013 the *AkzoNobel Innovation Excellence Award* for the most successful industrial innovation. More information is available at: [www.tonykiss.com](http://www.tonykiss.com)