



Webinar Series 2021: Fast, efficient & reliable problem solution

A series of six webinars on different topics related to process and product engineering has been organized by PSE for SPEED. The series will consist of the following webinars: 1) 3-days workshop on sustainable chemical (and biochemical) process design; 2) a 4-hours workshop on pure component and mixture properties estimation; 3) a 3 hours workshop on refrigerant design; 4) a 3 hours workshop on different aspects of chemical substitution; 5) a 4 hours workshop on general computer aided chemical product design; 6) a 4 hours workshop on computer aided modelling. See the table below for the date and time (in CET) for the webinars.

Program for Webinar 4: Chemical Substitution

The objective of this workshop is to give the participants a view on various aspects related to chemical substitution. As chemicals have become indispensable for modern society, so has the possibility for exposure to harmful chemicals increased significantly. Some of the numerous chemicals that are used in industrial processes, commodity products, consumer products and many more, may have undesired environmental, health and safety impacts. These chemicals need to be identified and substituted before they cause harm. Replacing harmful chemicals in products and/or processes with less harmful alternatives is the basis of green chemistry and inherently safer design of processes and the products that sustain the modern society. The challenges, and therefore, the opportunities for the process systems engineering community to develop state of the art methods and tools exist and hopefully the webinar 4 will motivate more people to join this fight. This webinar will have 3 lectures and a problem solution session with ChemSub, a special software for chemical substitution that is under development. Dr. Michael Overcash and Dr. Syeda Sultana Razia are the guest speakers.

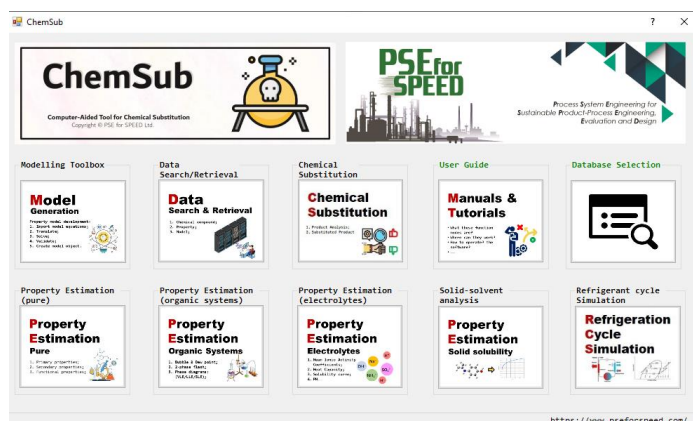
Course Organization

The Webinars are being organized by the PSE for SPEED office in Bangkok, Thailand. All confirmed registered participants will be sent a link to join the Webinars. The time indicated for each lecture includes Q&A after the lecture. The problem solution lectures will include step by step demonstration of selected problem solutions. There will be Q&A at the end of all lectures and also at the end of the problem sessions. Selected recorded presentations will also be available to subscribers to the PSE for SPEED YouTube channel and Webinar participants will be able to download copies of the presentation slides from the link:

<https://www.pseforspeed.com/webinar-lecture-and-recorded-video/>

Please direct all your questions to the PSE for SPEED in Bangkok to Ms. Orakotch Padungwatanaroj (P.orakotch@gmail.com).

Webinar 4: Chemical Substitution (25 August)



ChemSub is a tool for analysis of chemicals-based products and substitution of chemicals that have unacceptable EHS properties with chemicals that have acceptable properties and functions. The three main functions in ChemSub are:

- **Chemical Substitution** – analysis of chemicals-based products and based on the analysis, their substitution (also includes a tool for refrigerant design and selection)
- **Database Manager** – for retrieval properties, hazardous effects, chemical uses, chemical types based on collected data from various sources
- **Properties Estimation** – pure component and mixture properties tools to provide unavailable measured data

Lecture	Time (CET)*	Topic	Speaker
1	13:00 – 13:10	Welcome & introduction	Rafiqul Gani
2	13:10 – 14:00	Introduction to chemical substitution (brief review and perspectives)	Dr Syeda S Razia (guest speaker)
3	14:00 – 15:00	Chemical substitution and analysis of broader environmental changes	Dr. Michael Overcash (guest speaker)
4	15:00 – 16:00	Process systems engineering approach to chemical substitution	Rafiqul Gani
5	16:00 – 17:00	Problem solution using ChemSub (database features, product analysis and chemical substitution) plus Q&A	Anjan Tula; Orakotch Padungwatanaroj; Nichakorn Kuprasertwong

*The change in time (start time is 13:00 CET, Central European Time)

Next PSE for SPEED Webinar on Chemical Substitution (25 August, starting at 13:00 CET)