



TOMOCON

Smart Tomographic Sensors for
Advanced Industrial Process Control



3rd TOMOCON Summer School “Process Tomography and Data Processing”

- LUT Virtual -

27.07.2020-29.07.2020

ADDRESS:

LUT University
Lappeenranta Campus
Yliopistonkatu 34
53850 Lappeenranta



The Summer School topics are chemical process modeling, multiphase flow modeling and introduction to creative thinking. This Summer School is part of the Innovative Training Network (ITN) H2020-MSCA-ITN-2017 - Smart tomographic sensors for advanced industrial process control TOMOCON where attendance for external students is welcome.

Lecture materials are stored in MS-Teams and lectures are self-learning sessions or online lectures after which students can pose questions of unclear issues concerning lecture contents. The unclear issues are managed at the MS-TEAMS meeting next day (explaining open questions).

Acceptance for 2 ECTS credits: Attendance to 3rd TOMOCON SUMMER SCHOOL, approved 15-20 pages written review of lectures, one week time to return the reports.

Training of problem-oriented thinking Part 1&2 is obligatory for ESRs, other students do not need to attend the Friday programme on 29.07.2020 between 13-15.

A limited number of external participants is accepted. For further information and for registration to the event, please contact Mrs. Susann Riedel, s.riedel@hzdr.de



Day 1: Monday 27.07.2020 – PROCESS MODELING
Microsoft TEAMS
Time zone: +1 h GMT (CET)

24.07.	26.07.	Registration into Microsoft Teams Area	
09:00	09:15	MS-TEAMS Meeting Introduction	Prof. Tuomas Koironen / Prof. Uwe Hampel
09:15	10:15	Keynote: Industrial crystallization reactor and process design	Dr. Jani Siitonen, Dupont Finland
09:15	10:45	Unclear issues about lectures (if any) collected to MS-TEAMS Area	Students can pose questions which may need more explanations. The questions are collected to MS-Teams.
10:45	13:00	Process design with ASPEN+ Introduction to Process design steps Examples Part 1 Part 2 Part 3	Dr. Esko Lahdenperä, LUT University Mr. Harri Nieminen, LUT University
10:45	13:30	Unclear issues about lectures (if any) collected to MS-TEAMS Area	Students can pose questions which may need more explanations. The questions are collected to MS-Teams.
13:30	15:30	Introduction to Heat and mass transfer problems in chemical engineering, Examples (COMSOL Multiphysics, MATLAB) Part 1 Part 2	Prof. Tuomas Koironen, LUT University Mr. Pavel Maksimov, LUT University
13:30	16:00	Unclear issues about lectures (if any) collected to MS-TEAMS Area	Students can pose questions which may need more explanations. The questions are collected to MS-Teams.
16:00	16:45	Chemical reactions and reactor modeling, parameter estimation	Doc. Arto Laari, LUT University
16:00	17:15	Unclear issues about lectures (if any) collected to MS-TEAMS Area	Students can pose questions which may need more explanations. The questions are collected to MS-Teams.
17:15	17:30	MS-TEAMS Meeting – Wrap-up & Closing the 1 st day	All attendees of the day & Tuomas Koironen



Day 2: Tuesday 28.07.2020 – MULTIPHYSICS MODELING Microsoft TEAMS Time zone: +1 h GMT (CET)			
09:00	10:00	MS-TEAMS Meeting Explaining open questions from 1 st day	All students Dr. Jani Siitonen, Dr. Esko Lahdenperä, Mr. Harri Nieminen, Prof. Tuomas Koiranen, Mr. Pavel Maksimov, Doc. Arto Laari.
10:00	12:00	Keynote: Molecular dynamics modeling	Prof. Kari Laasonen, Aalto University
10:00	12:30	Unclear issues about lectures (if any) collected to MS-TEAMS Area	Students can pose questions which may need more explanations. The questions are collected to MS-Teams.
12:30	14:30	MS-TEAMS Meeting Fundamentals of CFD: Flow, heat and mass transfer models	Prof. Luis Portela, TU Delft
12:30	15:00	Unclear issues about lectures (if any) collected to MS-TEAMS Area	Students can pose questions which may need more explanations. The questions are collected to MS-Teams.
15:00	17:00	Fundamentals of CFD: Particles, drops, bubbles	Prof. Dominique Legendre, INPT
15:00	17:30	Unclear issues about lectures (if any) collected to MS-TEAMS Area	Students can pose questions which may need more explanations. The questions are collected to MS-Teams.
17:30	17:45	MS-TEAMS Meeting - Wrap-up & Closing 2nd day	All attendees of the day & Tuomas Koiranen



Day 3: Wednesday 29.07.2020 – PROBLEMS SEEKING SANDPIT

Microsoft TEAMS

Time zone: +1 h GMT (CET)

09:00	10:00	MS-TEAMS Meeting Explaining open questions from 2 nd day	All students Prof. Kari Laasonen Prof. Luis Portela Prof. Dominique Legendre
10:00	12:00	Introduction to TRIZ and solving industrial problems	Prof. Leonid Chechurin, LUT University
13:00	14:00	MS-TEAMS Meeting Training of problem-oriented thinking in a team, Part I	Prof. Uwe Hampel, Prof. Laurent Babout, Prof. Manuch Soleimani
14:00	15:00	MS-TEAMS Meeting Training of problem-oriented thinking in a team, Part II - Wrap-up of exercise	Prof. Uwe Hampel, Prof. Laurent Babout, Prof. Manuch Soleimani
15:30	15:45	MS-TEAMS Meeting - Wrap-up & Closing 3rd day	All attendees of the day & Tuomas Koironen