About PMH Application Lab

The Powertrain Manufacturing for Heavy Vehicles Application Lab (PMH Application Lab) is a research center at KTH which is operated in collaboration with the German research organization Fraunhofer. The PMH Application Lab works in research and development for the improvement of technologies in the field of powertrain manufacturing for heavy vehicles on high technology readiness levels to strengthen the competence of the Swedish heavy vehicle industry in this area. This comprises project execution, project coordination and dissemination with the goal to validate technologies and to accelerate the transfer of these technologies into industrial application.

Collaboration in gear education

The PMH Application Lab operates the gear seminars in close collaboration with Fraunhofer IPT and WZL of RWTH Aachen University. Recognized as one of the world’s leading institutions in transmission technologies, WZL conducts research spanning gear design, manufacturing, simulation and testing, all under one roof. Additionally, WZL offers a customized professional education program that has attracted over 500 members of the German gear industry.

PMH Application Lab is now offering this webinar to the Swedish gear industry. With our on-site experts and through collaboration with our partners at WZL and Fraunhofer IPT in Aachen, we combine over 50 years of history in gear related research to provide you with custom solutions that meet your toughest demands.

Our research partners:

KTH Royal Institute of Technology
www.kth.se
Fraunhofer IPT
www.ipt.fraunhofer.de
Fraunhofer IWU
www.iwu.fraunhofer.de
Swerim
www.swerim.se
Chalmers University of Technology
www.chalmers.se
WZL of RWTH Aachen University
www.wzl.rwth-aachen.de
About the webinar
Gears are used in various applications as for example trucks, cars, wind turbines, industrial gearboxes or aerospace applications. To design, manufacture and operate gears, it is necessary to have a deep understanding about gear geometry, gear manufacturing and gear performance.

The gear technology seminars by PMH Application Lab offer an insight into the world of gears and cover a wide range of relevant knowledge, starting from the mathematical basics and reaching into the application of modern manufacturing and testing technologies. The intensive course gear technology for industry professionals is designed for beginners in gear technology with no pre-experience or professionals with basic knowledge and the ambition to build up a general technical understanding in this field.

Fee
8 500 kr
The fee includes all course materials. Members of the PMH R&D Cluster get a 20% discount.

Registration
You can find the registration form on our website: https://www.kth.se/form/webinar-geartech-2020
The number of participants is limited.

Deadline for registration
August 20, 2020

Day 1 - Wednesday, September 9
8:00-8:30 Welcome and introduction
Basics of gears and transmission technology
8:30-9:00 Gear transmissions and their components
9:00-9:45 Geometry of gears
9:45-10:00 Coffee break
Machining and metrology of gears
10:00-10:45 Process chains and material selection
10:45-11:30 Primary shaping and forming processes in gear production
11:30-11:45 Gear soft machining I

Day 2 - Thursday, September 10
8:00-9:15 Gear soft machining II
9:15-9:45 Fine machining I: Geometrically defined cutting edge
9:45-10:00 Coffee break
10:00-11:30 Fine machining II: Geometrically undefined cutting edge
11:30-11:45 Exercise I: Selection of process chains

Day 3 - Wednesday, September 16
8:00-8:45 Solution of Exercise I: Selection of process chains
8:45-9:30 Exercise II: Quality assessment
9:30-9:45 Coffee break
Load carrying capacity of gears
9:45-10:45 Load and failure modes of gears
10:45-11:30 Investigation of load carrying capacity
11:30-11:45 Exercise III: Assessment of gear failures

Day 4 - Thursday, September 17
8:00-8:45 Solution of Exercise III: Assessment of gear failures
Noise and excitation behavior of gears
8:45-9:45 Excitation behavior of gears
9:45-10:00 Coffee break
10:00-11:00 Investigation and optimization of the excitation behavior of gears
11:00-11:30 Bevel gears and other gear types
11:30-11:45 Final discussion