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 and RISE - Research Institutes of Sweden. 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 educational program 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.

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Our research partners:

KTH Royal Institute of Technology
www.kth.se

Fraunhofer IPT
www.ipt.fraunhofer.de

Fraunhofer IWU
www.iwu.fraunhofer.de

RISE
www.ri.se

Swerim
www.swerim.se

Chalmers University of Technology
www.chalmers.se

WZL of RWTH Aachen University
www.wzl.rwth-aachen.de

Intensive course
gear technology
Stockholm, 12-13 June 2019
About the course
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 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.

Venue
KTH Royal Institute of Technology
PMH Application Lab
Brinellvägen 68
114 28 Stockholm
Sweden

Fee
11 000 kr
The fee includes all course materials, meals and a networking dinner. Members of the PMH R&D Cluster get a 20% discount.

Registration
You can find the registration form on our website: www.pmh.itm.kth.se/intensive-course-gt-2019
The number of participants is limited.

Agenda
Stockholm, 2019-06-12

Day 1
8:30-8:45 Welcome and introduction
Basics of gears and transmission technology
8:45-9:15 Gear transmissions and their components
9:15-10:00 Geometry of gears
10:00-10:15 Coffee break
Machining and metrology of gears
10:15-10:30 Process chains and material selection
10:30-11:15 Primary shaping and forming processes in gear production
11:15-12:00 Gear soft machining I
12:00-13:00 Lunch break
13:00-13:45 Gear soft machining II
13:45-14:15 Fine machining I: Geometrically defined cutting edge
14:15-15:45 Fine machining II: Geometrically undefined cutting edge
15:45-16:00 Coffee break
16:00-16:45 Exercise I: Selection of process chains
16:45-17:30 Exercise II: Quality assessment
17:30 End of day 1
19:00 Dinner

Day 2
Load carrying capacity of gears
8:30-9:30 Load and failure modes of gears
9:30-10:00 Exercise III: Assessment of gear failures
10:00-10:15 Coffee break
10:15-11:15 Gear design according to ISO 6336
11:15-12:00 Investigation of load carrying capacity
12:00-13:00 Lunch break
Noise and excitation behavior of gears
13:00-14:00 Excitation behavior of gears
14:00-14:15 Coffee break
14:15-15:15 Investigation and optimization of the excitation behavior of gears
15:15-15:45 Bevel gears and other gear types
15:45-16:00 Final discussion
16:00 End