



EPM 2021 SUMMER SCHOOL PROGRAM (JUNE 9-11, 2021)

EES Time - (Riga, Helsinki, Kiev..)

Wednesday	09/06/2021	Opening, lectures	9.00-17.00
Thursday	10/06/2021	Lectures, practical work in groups	9.00-17.00
Friday	11/06/2021	Practical work in groups, student presentations, closing	9.00-17.00

9th June

<i>Time</i>		<i>Topic</i>	<i>Speaker</i>
9:00-10:00	Info	Opening and general information	Organizers
10:00-11:00	Introduction	Introduction of participants	Participants
11:00-11:20	Break	Break	
11:20-12:20	Lecture 1	Induction Heating - Fundamentals, modern applications and challenges	Bernard Nacke
12:20-13:30	Lunch	Lunch break	
13:30-14:30	Lecture 2	Electromagnetic induction pump research in IPUL	Linards Goldšteins
14:30-15:30	Lecture 3	Recent advances in MHD bubble flow research	Mihails Birjukovs
15:30-15:50	Break	Break	
15:50-17:00	Work	Introduction to practical work	15 min each topic

10th June

<i>Time</i>		<i>Topic</i>	<i>Speaker</i>
9:00-10:00	Work	Division in the groups	
10:00-11:00	Work	Group work	
11:00-11:20	Break	Break	
11:20-12:20	Lecture 4	Magnetic levitation of liquids using AC and DC magnetic fields	Valdis Bojarevics
12:20-13:30	Lunch	Lunch break	
13:30-14:30	Lecture 5	Magnetohydrodynamic effects in liquid metal batteries	Norbert Weber
14:30-15:30	Work	Group work	
15:30-15:50	Break	Break	
15:50-17:00	Work	Group work	

11th June

<i>Time</i>		<i>Topic</i>	<i>Speaker</i>
9:00-10:00	Work	Group work	
10:00-11:00	Work	Group work	
11:00-11:20	Break	Break	
11:20-12:20	Lecture 6	Application of static magnetic field to the laser melting additive manufacturing	Jiang Wang
12:20-13:30	Lunch	Lunch break	

13:30-14:30	Lecture 7	Controlling Solidification Processes with Thermoelectric Magnetohydrodynamics	Andrew Kao
14:30-15:30	Work	Group work	
15:30-15:45	Break	Break	
15:45-17:00	Work	Student presentations, final remarks	

Group work plan

1	Didzis Berenis, Ivars Krastins	Numerical modeling of some MHD problems (OpenFoam).
2	Reinis Baranovskis, Antra Gaile	Ultrasound liquid metal measurements. Applications and limitations.
3	Valters Dzelve	Simulation of direct metal strip casting with EM flow control.