Workshop “Use of Magnetic Fields in Crystal Growth”

December 5 and 6, 2003, 9\textdegree{}00-16\textdegree{}00
Institute of Physics and Department of Physics of Latvia University
Zellu Str. 8, LV-1002, Riga, Latvia, Room 233

Tentative program

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1. Andrejs Cebers: Department of Physics, University of Latvia, Riga, Latvia. TOPICAL LECTURE: Magnetic fields in nanotechnology.

2. Bernard Nacke: Institute for Electrothermal Processes, University of Hanover, Germany. Use of electrothermal methods in material processing - the title still will be precised.

3. Peter Dold\textsuperscript{1}, A. Cröll\textsuperscript{2}, F. Szofran\textsuperscript{3}: \textsuperscript{1}Kristallographisches Institut, University of Freiburg, Germany; \textsuperscript{2}TU-Freiberg, Germany; \textsuperscript{3}SD46, NASA-MSFC, Huntsville, AL 35812, USA. Thermoelectromagnetic convection in semiconductor crystal growth.

4. Yves Delannoy: EPM-MADYLAM, France. The effect of the electromagnetic stirring on the concentration unbalance and shape of the crystallization front for the In-Ga-As Bridgman process - numerical modeling.

5. Yves Delannoy: EPM-MADYLAM, France. The mass transfer results given by numerical model on floating zone growth with dissolution.


8. Kaspars Dadzis\textsuperscript{1}, A. Muiznieks\textsuperscript{1,2}: \textsuperscript{1}Department of Physics, University of Latvia, Riga, Latvia; \textsuperscript{2}Institute for Electrothermal Processes, University of Hanover, Germany. Numerical modeling of hydrodynamics and mass transport in Vertical Gradient Freeze Crystal Growth with non-stationary magnetic fields.

9. Armands Krauze\textsuperscript{1}, A. Muiznieks\textsuperscript{1,2}: \textsuperscript{1}Institute for Electrothermal Processes, University of Hanover, Germany; \textsuperscript{2}Department of Physics, University of Latvia, Riga, Latvia. 2D Modeling of turbulent melt flow in CZ crystal growth process under influence of several axially symmetric dynamic magnetic fields.


11. Andis Rudevics\textsuperscript{1}, A. Muiznieks\textsuperscript{1,2}: \textsuperscript{1}Department of Physics, University of Latvia, Riga, Latvia; \textsuperscript{2}Institute for Electrothermal Processes, University of Hanover, Germany. Transient modeling of the FZ process for large silicon single crystal growth.

12. Kaspars Lacis\textsuperscript{1}, A. Muiznieks\textsuperscript{1,2}: \textsuperscript{1}Department of Physics, University of Latvia, Riga, Latvia; \textsuperscript{2}Institute for Electrothermal Processes, University of Hanover, Germany. Modeling of the open melting front in HF EM field for FZ silicon single crystal growth process.
13. Ivars Drikis: Department of Physics, University of Latvia, Riga, Latvia. INVITED LECTURE. Application of photonic crystals based on semiconductor materials for integrated electronic-optic micro systems.


15. Institute for crystal Growth, Berlin, Germany. (The author and the title will be precised).

16. Armands Krauze, A. Muiznieks: Institute for Electrothermal Processes, University of Hanover, Germany; Department of Physics, University of Latvia, Riga, Latvia. 3D modeling of turbulent melt flow in CZ crystal growth process under influence of horizontal static magnetic field.

17. Sandris Lacis, A. Muiznieks: Department of Physics, University of Latvia, Riga, Latvia; Institute for Electrothermal Processes, University of Hanover, Germany. 3D modeling of the stress field in the crystal during CZ process by considering the slip directions.

18. Andis Rudevics, A. Muiznieks: Department of Physics, University of Latvia, Riga, Latvia; Institute for Electrothermal Processes, University of Hanover, Germany. Analysis of the influence of the melt motion on the shape of molten zone in FZ process for large silicon single crystal growth.

19. Martins Mihailovs, A. Muiznieks: Department of Physics, University of Latvia, Riga, Latvia; Institute for Electrothermal Processes, University of Hanover, Germany. Local analysis of crystallization dynamics in the vicinity of triple point for FZ process.

20. Janis Virbulis, A. Muiznieks: PAIC Ltd, Riga, Latvia; Department of Physics, University of Latvia, Riga, Latvia. Electromagnetic, hydrodynamic and thermal analysis of wire melting and evaporation process.

21. Svetlana Aleksandrova, S. Molokov: Coventry University, School of Mathematical and Information Sciences, UK. Classification of buoyant convective flows in cylindrical cavities in a strong, uniform, axial magnetic field.

22. Andris Bojarevics: Institute of Physics, University of Latvia, Salaspils, Latvia. Semi-levitation of the molten sodium in HF EM field, velocity measurements in the melt.

23. Ilmars Grants, G. Gerbeth: Institute of Physics, University of Latvia, Salaspils, Latvia; Forschungszentrum Rossendorf, Germany. Rayleigh-Benard instability in a cylinder under influence of rotating and steady magnetic fields.


25. A. Muiznieks, Kaspars Dadzis: Department of Physics, University of Latvia, Riga, Latvia; Institute for Electrothermal Processes, University of Hanover, Germany. Simplified model for Monte Carlo simulations of point defects during industrial silicon crystal growth.