

**Professor**, Mechanical, Materials and Aerospace Engineering Department, Illinois Institute of Technology (IIT), Chicago, IL 60616;  
[AOSTROGO@IIT.EDU](mailto:AOSTROGO@IIT.EDU)  
<https://sites.google.com/hawk.iit.edu/laboratory-for-crystal-growth/home>



**A.G. Ostrogorsky**

**Co-Founder and President** of TermoMechanica, Inc., a small business established in 1989, incorporated in February 2001.

Prof. Ostrogorsky received his Dipl. Ing. degree in Mechanical Engineering at the University of Belgrade (1977), MS in Nuclear Engineering at Rensselaer Polytechnic Institute, RPI (1981), and Sc.D. in Mechanical Engineering (heat and mass transfer) at Massachusetts Institute of Technology, MIT (1986).

He was a Post-doctoral associate, in Professor A.F. Witt's Crystal Growth Laboratory, at MIT, Assistant Professor at Columbia University (1987-1992), and Alexander von Humboldt Fellow in Professor Georg Muller's Laboratory, at Universität Erlanger-Nürnberg (1991). From 1993 to 2009 he was Professor at RPI. In 2009 he moved to the Illinois Institute of Technology (IIT) in Chicago, where he is currently Professor of Materials and Aerospace Engineering.

Professor Ostrogorsky was Director of the Center for Microgravity and Materials Research (CMMR), and Professor at the University of Alabama in Huntsville (1999-2000). He was Principal Investigator (PI) of the investigations sponsored by NASA (1996-2004) and CASIS (2016-2023) with experiments conducted at the International Space Station in 2002, 2019 and 2021. Associated Editor of the Journal of Crystal Growth (2006-2019), Member of the Executive Committee of AACG (2005 to 2019), Fellow of ASME (2005-) and Associate Fellow of AIAA(2002-).

### **Research Interests:**

Heat and mass transfer phenomena in materials processing. Convection and diffusion phenomena in crystal growth. Radiation heat transfer. Production of semiconductor single crystals. The major research projects include:

- Measurements of Diffusion Coefficients of Dopants in molten Ge and Si (The DiGS Investigation), sponsored by NASA 2020 to 2025
- Crystal growth at the International Space Station: CASIS (2016-2023)
- Crystal growth at the International Space Station: CGB and SUBSA Investigation (1993 to 2004)
- Growth of wide band gap semiconductor crystals (B<sub>6</sub>P, InI) for detection of neutrons and x-rays.
- Bulk growth of piezoelectric alloys, PMN<sub>x</sub>-PT<sub>1-x</sub> at 1400 C.
- Growth of carbon single walled nanotubes (SWNTs) using the electric arc process.
- Fourier Transform Infrared Analysis (FTIR) at high temperature (up to 1420 C).

### **Membership**

- American Association for Crystal Growth (AACG).
- American Society of Mechanical Engineers (ASME): Fellow
- American Inst. of Aeronautics and Astronautics (AIAA): Associate Fellow
- American Society for Engineering Education (ASEE): Member
- American Nuclear Society (ANS), Member
- TermoMechanica Inc., 420 Sheridan Rd. President.

## Handbook Chapters:

- Chapter 25 "Segregation and component distribution" A.G. Ostrogorsky and M.E. Glicksman, *Handbook of Crystal Growth*, 2nd ed. T. Nishinaga, Tom Kuech and P. Rudolph, Editors. p 995-147 <http://dx.doi.org/10.1016/B978-0-444-63303-3.00025-0>
- "Bulk Ternary Semiconducting Compounds", W.A. Bonner and A.G. Ostrogorsky, *Encyclopedia of Materials: Science and Technology*, p. 865-871, Elsevier Science, 2007
- Chapter 13 "Convection in Melt Growth", G. Müller and A.G. Ostrogorsky, *Handbook of Crystal Growth*, Vol.2, Editor: D.T.J. Hurle, North-Holland/Elsevier, (1994).
- "Aging of Polyurethane Foams, the Influence of Gas Diffusion on Thermal Conductivity", A. G. Ostrogorsky, L.R. Glicksman, ORNL/SUB 84-9009/2, 1986. National Technical Info. Services, U.S. Dept. of Commerce.

## Selected Journal Publications:

1. N. Dropka and A. G. Ostrogorsky, "Interface shape under the insulating baffle in vertical Bridgman systems", *Crystal Research and Technology* 57 (2022) <https://doi.org/10.1002/crat.202100251>
2. A.G. Ostrogorsky, Review Article "Disk-driven flows and interface shape in vertical Bridgman growth with a baffle", *Progress in Crystal Growth and Characterization of Materials* 67 (2021) <https://doi.org/10.1016/j.pcrysgrow.2020.100512>
3. N.Dropka, A.G. Ostrogorsky, "Interface control in vertical Bridgman growth by shaped and flat rotating baffles" *J. Crystal Growth* 526 (2019) 125221
4. A.G. Ostrogorsky, N.Dropka and V. Riabov, "Interface control by rotating submerged heater/baffle in vertical Bridgman configuration" *J. Crystal Growth* 498 (2018) 269–276
5. I. Nicoara, D.Nicoara, C. Bertorello, G.A. Slack and A. G. Ostrogorsky, M. Groza and A. Burger "Czochralski Growth of Indium Iodide and other Wide Bandgap Semiconductor Compounds", *MRS Proc.* 1341 (2011) 95-104.
6. A. V. Churilov., W.M. Higginsa, A.G. Ostrogorsky, G.Ciampia, E. V. van Loefa, S. Motakef, M.R. Overholta, K. S. Shaha," Modeling and Crystal Growth of Semitransparent Rare Earth Halides", *J. Crystal Growth* (310) (2008), 2094-2098
7. A. G.Ostrogorsky, C. Marin, A.Churilov, M. Volz, W.A. Bonner, T. Duffar, "Reproducible Te-doped InSb Experiments in Microgravity Science Glovebox at the International Space Station", *J. Crystal Growth* 310 (2008) 364-371.
8. I. Nicoara, D. Nicoara, C. Marin and A.G. Ostrogorsky, "PMNT-Ferroelectric Crystal Grown by High Pressure (8 atm) Bridgman Method", *J. Crystal Growth* 274 (2004) 118-125
9. C. Marin, M.D. Serrano\* and A.G. Ostrogorsky, "Convection Assisted Synthesis of Small Diameter Single-walled Carbon Nanotubes by the Electric Arc Technique, in Vertical Configuration", *Nanotechnology* 13, (2002) 218-221.
10. Marin, C., Ostrogorsky, A.G., Fullon, G. Jundt, D. and Motakef, S., "Infrared Extinction Coefficient of LiNbO<sub>3</sub> at Temperatures to 1150 °C: The Semiconductor Behavior of Metal Oxides at High Temperature", *Applied Physics Letters* 78 (2001) 1379-1384.
11. Dutta P.S., and Ostrogorsky, A.G. "Segregation of Ga in Ge and InSb in GaSb ", *J. Crystal Growth* 217 (2000) 360-365.
12. Marin, C., and Ostrogorsky, A.G. "Growth and segregation of Ge<sub>0.98</sub>Si<sub>0.02</sub> alloy in vertical Bridgman configuration with a baffle" *J. Crystal Growth* 211 (2000) 378-383.
13. Dutta P.S., and Ostrogorsky, A.G., "Suppression of cracks in directionally solidified bulk (GaSb)<sub>x</sub>(InAs)<sub>1-x</sub> crystals through forced convection in the melt generated by submerged baffle", *J. Crystal Growth*, 194 (1998) 1-6.
14. Dutta P.S., and Ostrogorsky, A.G., "Nearly diffusion controlled segregation of tellurium in GaSb", *J. Crystal Growth* 191 (1998) 904-908.
15. S. Meyer and A.G. Ostrogorsky, "Forced Convection in Vertical Bridgman Configuration with the Submerged Heater" *J. Crystal Growth* 171 (1997) 566-576
16. A.G. Ostrogorsky, H.J. Sell, S. Scharl and G. Müller, "Convection and Segregation During Growth of Ge and InSb Crystals by the Submerged Heater Method", *J. Crystal Growth* 128, (1993) 201-206.
17. A.G. Ostrogorsky, K. Yao , A. F. Witt, "Infrared Absorbance of Molten B<sub>2</sub>O<sub>3</sub> at Temperatures to 1250 C", *J. Crystal Growth* 84, (1987), 460-466.