

# Program of the Anniversary Symposium “Unipress 50”

“Highlights in III-N semiconductors, THz physics and nanomaterials”

## THURSDAY (OCTOBER 6th)

18.00-21.00 Welcome Reception *Staszic Palace, Warsaw*

## FRIDAY (OCTOBER 7th)

### Symposium Opening

9.00-9.15 Opening Ceremony and welcome address *Izabella Grzegory (IHPP PAS)*  
9:15-9:20 Address from and to Unipress *Sylwester Porowski (IHPP PAS)*  
9:20-9:30 Address to Unipress Hosts and Guests *Ministry of Education and Science and Polish Academy of Sciences*

### Session N0 Opening Session

*Chair: Y. Nanishi*

9.30-10.10 Let's save the Earth with GaN *Hiroshi Amano (Nagoya University)* N0.1  
10.10-10.30 Coffee break / POSTERS

### Session N1 Bulk crystals of III-N semiconductors

*Chair: H. Fujioka*

10:30-10:55 Unlocking the AlN technology one step at a time *Zlatko Sitar (NCSU)* N1.1  
10:55-11:20 History of Bulk GaN Crystal Growth Technology at Unipress *Michał Boćkowski (IHPP PAS)* N1.2  
11:20-11:45 A Tribute to the Contribution of UNIPRESS to the Physics of Nitride Semiconductors at the Occasion of its Jubilee *Bernard Gil (CNRS, Univ. Montpellier)* N1.3  
11:45-12:10 Thermodynamic calculation of the Fe-Ga-N phase diagram and GaN crystallization at high temperatures and pressures *Volodymyr Turkevich (Institute for Superhard Materials, Kiev)* N1.4  
12:10-12:35 25 years history of Na-flux GaN growth technology *Yusuke Mori (Osaka University)* N1.5  
12.35-13.30 Lunch break / POSTERS

### Session N2 GaN light sources

*chair: A. Hoffman*

13:30-13:55 Quantum efficiency of InGaN/GaN quantum wells in the low dislocation density regime *Nicolas Grandjean (EPFL, Lausanne)* N2.1  
13:55-14:20 Towards the realization of a light-emitting synthesizer using nitride semiconductors *Yoichi Kawakami (Kyoto University)* N2.2  
14:20-14:45 Nitride laser diodes for quantum technologies and photonics integrated circuits *Piotr Perlin (IHPP PAS)* N2.3  
14:45-15:10 Metalorganic Chemical Vapor Deposition – The Swiss Army Knife of III-V Epitaxy *Russ Dupuis (Georgia Tech.)* N2.4  
15.10-15.30 Coffee break / POSTERS

### Session N3 New concepts in GaN physics and technology

*chair: S. Chichibu*

15:30-15:55 MBE growth and properties of ferroelectric and superconducting nitrides *Debdeep Jena (Cornell University)* N3.1  
15:55-16:20 Nitride quantum structures and devices by MBE *Czesław Skierbiszewski (IHPP PAS)* N3.2

16:20-16:45	Selective-area p-type doping by ion implantation with ultra-high-pressure annealing and its device applications	Tetsuo Kachi ( <i>Toyota lab.</i> )	N3.3
16:45-17:10	Harvesting polarization doping for RF, Power and DUV	Huili (Grace) Xing ( <i>Cornell Univ.</i> )	N3.4
17.10-17.30	Coffee break / POSTERS		
17:30-19:00	PANEL DISCUSSION - Future of red-light emitters.	<i>chairs: T. Suski, M. Leszczyński, S. Krukowski</i>	
20:00-24:00	Symposium Dinner - Villa Foksal		

## SATURDAY (OCTOBER 8th)

<b>Session N4 Nanomaterials</b>		<i>chair: K. J. Kurzydłowski</i>	
9:00-9:25	Microwave – assisted synthesis of micro and nanoparticles	Cristina Leonelli ( <i>University of Modena and Reggio Emilia</i> )	N4.1
9:25-9:50	Fabrication of Nanocrystalline Diamond Layers and Engineered Diamond Micro- and Nanocomponents	Hans Fecht ( <i>University of Ulm</i> )	N4.2
9:50-10:15	Chemical synthesis of useful nanomaterials at moderate temperatures and in high energy density environments	Witold Łojkowski ( <i>IHPP PAS</i> )	N4.3
10:15-10:45	Impact of plastic deformation by the hydrostatic extrusion method on properties of metals and metal alloys for industrial applications	Mariusz Kulczyk ( <i>IHPP PAS</i> )	N4.4
10.45-11.05	Coffee break / POSTERS		
<b>Session N5 Soft matter and glass</b>		<i>chair: A. Wyszomtek</i>	
11:05-11:30	Oxide glasses under pressure	Morten M. Smedskjær ( <i>Aalborg University</i> )	N5.1
11:30-11:55	New scaling paradigm for dynamics in glass-forming systems	Sylwester Rzoska ( <i>IHPP PAS</i> )	N5.2
11:55-12:20	On the other extremity of the pressure scale – condensed matter under absolute negative pressure	Attila Imre ( <i>Budapest University of Technology and Economics</i> )	N5.3
12:20-12:45	Liquid crystals as a playground of topological phenomena in physics	Samo Kralj ( <i>University of Maribor</i> )	N5.4
12.45-13.40	Lunch break / POSTERS		
<b>Session N6 THz physics and technologies</b>		<i>chair: T. Story</i>	
13:40-14:05	Si COMS field-effect transistors and their application as THz detectors for 3D holographic Fourier imaging and s-SNOM spectroscopic near-field microscopy	Hartmut Roskos ( <i>Frankfurt Goethe University</i> )	N6.1
14:05-14:30	Magneto-spectroscopy and Terahertz cyclotron emission of massless electrons in HgCdTe crystals	Frederic Teppe ( <i>Univ. Montpellier</i> )	N6.2
14:30-14:55	Amplification of THz Radiation by Strong Interaction of Drifting Electrons with Plasmons in Graphene and GaN	Wojciech Knap ( <i>IHPP PAS</i> )	N6.3
	AlGaIn/GaN Terahertz Detectors as Imaging Sensors for THz applications: from Materials to Application ( <i>cancelled</i> )	Viktor Krozer ( <i>FBH Berlin</i> )	N6.4
14:55-15:10	Closing	Izabella Grzegory ( <i>IHPP PAS</i> )	