

Sunday, September 20

- 14:00-16:30 **Social Activity** (extra registration required)
Guided tour of the Highlights of Leuven
Meeting point: [Alfons Smetsplein, 3000 Leuven](#)
- 16:30-18:00 **Welcome Reception & Registration**
The Faculty Club
[Groot Begijnhof 14, 3000 Leuven](#)
- 18:00-22:00 **Committee meeting & dinner** (restricted)

Monday, September 21

- 8:00-9:00 **Registration & welcome coffee**
- 9:00-9:15 Opening remarks

Session 1 Atomistic simulations *Session chair: Matthias Wuttig*

- 9:15-9:50 **Ovshinsky Lecture Award**
Wei Zhang, Xi'an Jiaotong University, China
- 9:50-10:15 Invited: **Volker Deringer**, Oxford University, United Kingdom
- 10:15-10:40 Invited: **Amir Hajibabaei**, Microsoft Research, United Kingdom
High-throughput atomistic simulation of phase-change materials from GST to broad chemistry
- 10:40-11:15 **Coffee break**

Session 2 Atomistic simulations / threshold switching *Session chair: Massimo Longo*

- 11:15-11:40 Invited: **Nian-Ke Chen**, Jilin University, China
Coherent Interfaces for Accelerating Crystallization in Phase-Change Memory: From Concept to High-Throughput Screening
- 11:40-11:55 **Omar Abou El Kheir**, University of Milano Bicocca, Italy
Mid-gap states in Ge₂Sb₂Te₅ from atomistic simulation with a machine learning potential
- 11:55-12:20 Invited: **Paolo Fantini**, Micron Technology Inc., Italy
Unified Physical Picture of Ovonic Threshold Switching, Polarity-Dependent VT, and VT Drift in Chalcogenide Glasses
- 12:20-12:35 **Yuting Sun**, Shanghai Jiao Tong University, China
Electronic Origin of Threshold Switching in Amorphous Chalcogenides
- 12:35-12:45 **Group photo**
- 12:45-14:35 **Lunch & [Poster Session I](#)**

Session 3 OTS and Selector-Only Memory

Session chairs: Yuji Sutou, Pierre Noé

- 14:35-15:00 **Invited: Taras Ravsher**, imec, Belgium
Understanding the Mechanism of Polarity Effect in OTS Materials for Selector-Only Memory Applications
- 15:00-15:15 **Kosuke Karakida**, Nippon Electric Glass Co., Ltd., Japan
Arsenic-free OTS Materials for Selector and Selector-Only Memory Applications
- 15:15-15:30 **Mohamad Kanaan**, STMicroelectronics, CEA-Leti, Univ. Grenoble Alpes, France
Device and Current Scaling in GSSN-based Threshold Changeable Memory
- 15:30-15:45 **Suyoun Lee**, Korea Institute of Science and Technology, Republic of Korea
Neuromorphic Boolean-logic operators based on Ovonic Threshold Switch (OTS)
- 15:45-16:00 **Siwon Park**, Yonsei University, Republic of Korea
Three-Dimensional Conductivity Tomography of Amorphous Chalcogenide OTS Devices via AFM-Based Nanoscale Etching for Degradation Analysis
- 16:00-16:30 **Coffee break**

Session 4 Deposition/OTS/Thin films

Session chairs: Suyoun Lee, Bart Kooi

- 16:30-16:45 **Tobias Peissker**, imec, Belgium
Atomic layer deposition of GeAsSe for vertical 3D selector-only memory
- 16:45-17:00 **Sungjin Kim**, Seoul National University, Republic of Korea
Atomic Layer Deposition of High-Density GeSe for Stable Vertical Ovonic Threshold Switch and Selector-Only Memory
- 17:00-17:15 **Daiki Inose**, Tohoku University, Japan
Fabrication of amorphous ternary Ge-S-X (X = Te, Sn) thin films by vacuum evaporation for OTS application
- 17:15-17:30 **Xueqi Xing**, Xi'an Jiaotong University, China
Phase-change properties of 2 nm Sb thin films
- 17:30-17:55 **Invited: Felix Hoff**, RWTH Aachen University, Germany
Divergent Coherent Phonon Responses Across the Metal-Insulator Crossover
- 18:30-19:30 **Social activity**: drink reception offered by the city of Leuven at the [Paul van Ostaijensite](#)
private bus transfer option from the conference venue is foreseen (included)

Tuesday, September 22

8:30-9:00 **Registration & welcome coffee**

Session 5 Photonics & Metasurfaces I Session chairs: Ming Xu, Robert Simpson

- 9:00-9:25 **Invited: Benoit Cluzel**, Université Bourgogne Europe, France
Harnessing GeSeTe Alloys for Nonlinear and Programmable Silicon Photonics
- 9:25-9:40 **Anbarasu Manivannan**, Indian Institute of Technology Madras, India
Reconfigurable Hyperuniform Phase Change Metasurface for Statistical Light Control
- 9:40-9:55 **Ali Ibrahim M Alnashri**, University of Exeter, United Kingdom
Reconfigurable Reflective Metasurface for Non-Volatile Beam Steering in Near-Infrared
- 9:55-10:10 **Shan Song**, Chemnitz University of Technology, Germany
Optical switches based on phase change materials
- 10:10-10:35 **Invited: Carlos A. Ríos Ocampo**, University of Maryland, United States of America
Phase-Change Materials Exhibit the Largest Refractive Index Modulation: What Else Can We Do?
- 10:35-11:10 **Coffee break**

Session 6 Photonics & Metasurfaces 2 Session chairs: Rob Simpson, Anbarasu Manivannan

- 11:10-11:35 **Invited: Sébastien Cuffe**, CNRS Institut des Nanotechnologies de Lyon, France
Programmable Integrated Photonics with Chalcogenide Phase-Change Materials
- 11:35-11:50 **Priya Deoli**, University of Southampton, United Kingdom
Physics of Low-loss Phase Change Material Sb₂Se₃ Enabled Nanophotonic Metasurface
- 11:50-12:05 **Christian A. Valencia Campoverde**, imec, KU Leuven, Belgium
Enhancing optical contrast and crystallization uniformity in antimony sulfide thin films through selenium incorporation
- 12:05-12:20 **Mouad Mraouni**, STMicroelectronics – INL, France
Overcoming optical anisotropy in reconfigurable Sb₂S₃ metasurfaces
- 12:20-12:35 **Johan Herlent**, Ecole Centrale de Lyon, France
Controlling phase change of low loss PCM Sb₂S₃ using graphene microheater
- 12:35-14:30 **Lunch & Poster Session 2**

Session 7 Structure & properties I Session chair: Giuseppe D'Arrigo

- 14:30-14:55 **Invited: Seppe van Dyck**, Ghent University, Belgium
Heat Control at the Nanoscale with TMD Superlattices
- 14:55-15:20 **Invited: Jiangjing Wang**, Xi'an Jiaotong University,
High-quality growth of phase-change heterostructure thin films
- 15:20-15:35 **Andriy Lotnyk**, Leibniz Institute of Surface Engineering (IOM), Germany
Thickness-driven optical and structural evolution in GeTe and Sb₂Te₃ thin films grown by pulsed laser deposition
- 15:35-16:00 **Invited: Melissa Santala**, Oregon State University, United States of America
A re-evaluation of PCM crystal growth rates and fragility based on synchronous in-situ TEM and nanocalorimetry measurements
- 16:00-16:30 **Coffee break**

Session 8	Structure & properties 2	Session chair: Andriy Lotnyk
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- 16:30-16:45 **Matthias Wuttig**, RWTH Aachen University, Germany
Unraveling the origin of non-Zachariasen glasses
- 16:45-17:00 **Lorenzo Sali**, Politecnico di Milano, STMicroelectronics, Italy
Novel tool for chemical data visualization and analysis of doped Ge-rich GeSbTe Phase-Change Memory
- 17:00-17:25 **Invited: Elisa Petroni**, STMicroelectronics, University of Milano-Bicocca, Italy
Ge-rich GST as Compositional Phase-Change Memory: from physical characterization to device-scale simulation
- 18:30-23:30 **Reception & Symposium dinner at the Faculty Club**
private bus transfer option from the conference venue is foreseen (included)

Wednesday, September 23

8:30-9:00 **Welcome coffee**

Session 9	Exotic materials & functionalities	Session chair: Magali Putero
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- 9:00-9:25 **Invited: Stephen M. Wu**, University of Rochester, United States of America
Crystalline-to-Crystalline Phase-Change Materials and Devices from 2D MoTe₂
- 9:25-9:40 **Jules Lagrave**, CEA-Leti, France
Beyond α -GeTe: A Novel Chalcogenide-based Ferroelectric Rashba Semiconductor
- 9:40-10:05 **Invited: Wei Zhang**, Xi'an Jiaotong University, China
Multilevel programming capacity of CrTe₃-based phase-change memory devices
- 10:05-10:20 **Roxane Mamberti**, IM2NP (Institut Matériaux Microélectronique Nanosciences de Provence), France
W-Doped VO₂ Thin Films and Metasurfaces for Tunable Thermochromic Applications
- 10:20-10:50 **Coffee break**

Session 10	AI Hardware	Session chairs: Wei Zhang, Elisa Petroni
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- 10:50-11:05 **Aida Todri-Sanial**, Eindhoven University of Technology, Netherlands
A Scalable Oscillatory Neural Network Architecture Based on VO₂ Neurons and Multibit ReRAM Coupling Elements
- 11:05-11:20 **Piotr Popek**, University of Groningen, Netherlands
Cryogenic neuromorphic computing – a path towards dedicated phase change memory
- 11:20-11:35 **Diego Hoffman**, Swave, Belgium
How Phase Change Materials enable AI to drive the next phase transition in human-world interfaces
- 11:35-11:50 **Stefano Giangrosso**, Politecnico di Milano, Italy
Voltage-induced tuning of inference accuracy in drift-compensated phase change memory for edge AI accelerators
- 11:50-12:15 **Invited: Matteo Baldo**, STMicroelectronics, Italy
ePCM for AI acceleration: how material properties and device geometry shape Neural Network accuracy
- 12:15-12:30 **Break (Processing Votes for Awards)**
- 12:30-12:45 **Closing remarks and Award Ceremony**
- 12:45-13:30 **Packed lunch (takeaway)**

Poster session I - Monday, September 21 12:45-14:35

- P1_01_A-011 **Chengxiang Suo**, Center for Alloy Innovation and Design (CAID), State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China.
First-principles insights into amorphous and crystalline Mn/Sb₂Te₄ magnetic alloy
- P1_02_A-013 **Yihui Jiang**, Center for Alloy Innovation and Design (CAID), State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, China.
First-principles simulations on layered and amorphous TMGeTe₃ alloys for phase-change applications
- P1_03_A-017 **Siqi Tang**, Huazhong University of Science and Technology, China.
Machine-Learning-Resolved Two-Stage Nucleation in Phase-Change GeTe
- P1_04_A-019 **Meng Niu**, State Key Laboratory of Integrated Optoelectronics, College of Electronic Science and Engineering, Jilin University, China.
Photoinduced Pseudosliding in Antimonene Heterostructures for Ultrafast Photonics
- P1_05_A-023 **Pierre Meilleur**, CEA-Leti / STMicroelectronics, France.
Innovative Approach for Reliable Integration of Se-based Chalcogenide Thin Films featuring Outstanding Phase-Change Properties
- P1_06_A-025 **Ioannis Trikoilis-Koll**, Université Grenoble Alpes, CEA, Leti, France.
Towards ultra-fast VO₂ based selectors for magnetic random access memory
- P1_07_A-027 **Nils Holle**, University of Münster, Institute of Materials Physics, Germany.
Formation of medium-range order in supercooled-liquid antimony from first principles
- P1_08_A-039 **Yu-Ting Huang**, Jilin University, China.
Vacancy Defects in 2D Ferroelectric In₂Se₃ and the Conductivity Modulation by Polarization-Defect Coupling
- P1_09_A-045 **Ruoqin Wang**, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China.
Enhanced Switching Endurance of Phase Change Memory: the Role of Inherent Two-dimensional Crystals
- P1_10_A-041 **Yuting Sun**, School of Integrated Circuits, Shanghai Jiao Tong University, China.
Material Gene of Ovonic Threshold Switches
- P1_11_A-047 **Bai-Qian Wang**, College of Electronic Science and Engineering, Jilin University, China.
Direct Crystallization of Phase-change Superlattices Bypassing the Conventional Intermediate Cubic Phase
- P1_12_A-051 **Victor Bogenschutz**, STMicroelectronics, CEA-Leti & Univ. Grenoble-Alpes, France.
Tuning Crystallization Kinetics in Ge-rich GeSbTe by Ge-Substitution
- P1_13_A-053 **Wei-Chiao Chang**, Department of Materials Science and Engineering, Tohoku University, Japan.
Resistive switching behaviors of Al-doped CrN thin films
- P1_14_A-059 **Christian Petrucci**, Dipartimento di Fisica - Università di Roma "Tor Vergata", Italy.
Crystallization kinetics and local structure in In/Ge/Te₃ alloy
- P1_15_A-065 **Nishant Saxena**, Liverpool John Moores University, United Kingdom of Great Britain and Northern Ireland.
Uncovering Multi-Timescale Defect Dynamics in GeAsSe Ovonic Threshold Switching Devices
- P1_16_A-083 **Bram van der Linden**, imec, KU Leuven, Belgium.
Ab initio study of precursor reactivity for GeAsSe ALD

Poster session 2 - Tuesday, September 22 12:35-14:30

- P2_01_A-002 **Giuseppe Alfinito**, University of Milano-Bicocca, Italy.
Seeding approach to the crystal nucleation rate in Ge₂Sb₂Te₅ with a machine learning interatomic potential
- P2_02_A-014 **Huiyu Li**, Xi'an Jiaotong University, China.
Multiscale simulations of Ge–Sb–Se–Te phase-change alloys for all-optical waveguide application
- P2_03_A-018 **Ruobing Wang**, Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China.
Mutual Confinement Effect in In-Sb-Te Phase Change Memory for Ultrafast and Thermally Robust Embedded Data Storage Applications
- P2_04_A-020 **Simone Marcorini**, University of Milano-Bicocca, Italy.
Structural and electronic properties of GeAsSe alloys revisited with r2SCAN functional
- P2_05_A-028 **Yoann Brûlé**, Univ. Grenoble Alpes, CEA, LETI, F-38054, Grenoble, France.
Integrated reconfigurable optical phase shifters using low-loss chalcogenide phase-change materials
- P2_06_A-034 **Siwon Park**, Yonsei University, Republic of Korea.
Low-Power N-Si-Ge-Te Ovonic Threshold Switching Devices for Artificial Spiking Neuron Applications
- P2_07_A-036 **F. Zahn**, Felix Bloch Institute for Solid State Physics, Leipzig University, Germany.
Distortion-driven bonding characteristics in electron-rich group IV-VI chalcogenides
- P2_08_A-038 **Junwoo Park**, Seoul National University, Republic of Korea.
Sacrificial Atomic Layer Deposition of Tellurium–Selenium Alloy Thin Films
- P2_09_A-046 **Agnese Foglietti**, CNR-IMM, Department of Chemical Science and Technologies, University of “Tor Vergata”, Italy.
Structural Evolution and Ge Segregation in Ge-Rich GST Thin Films on Flexible Substrates during Annealing
- P2_10_A-050 **Shuhei Orihara**, Tohoku University, Japan.
Feasibility Study of Quasi-One-Dimensional vdW HfTe₅ Film for Neuromorphic Applications
- P2_11_A-064 **Stefano Cecchi**, University of Milano-Bicocca, Italy.
Thickness-dependent characterization of epitaxial two-dimensional tellurium on silicon
- P2_12_A-069 **Sourav Mondal**, Indian Institute of Technology Madras, India.
Reconfigurable Transparent Conducting Metasurface for optoelectronic device applications
- P2_13_A-070 **Rajeswari Yerraguntla**, Indian Institute of Technology Madras, India. *Exploring Thin Ge₁5Te₈3Si₂ films for Neuromorphic computing Applications*
- P2_14_A-071 **Tomasz Bednarek**, Fraunhofer Institute for Electronic Nano Systems (ENAS), Chemnitz, Germany.
A Coupled Multiscale Framework for Shadowing Effects in PVD Simulation
- P2_15_A-072 **Kostiantyn Shportko**, V.E. Lashkaryov Institute of Semiconductor Physics of NAS, Ukraine.
Structural, Optical, and Thermal Evolution in (GeTe₄)_n(GaTe₄)_{1–n} Alloys
- P2_16_A-073 **Gyounghoon Oh**, Department of Energy Science, Sungkyunkwan University, Suwon 16419, Republic of Korea.
Switching Behavior in Vertical N-Doped GeTe Selector Devices