

PhD Topic Overview for the Upcoming Call (June 22nd – July 8th, 2026)

This page provides an **overview of the PhD topics** that will be open for application in the upcoming PhD call.

At this stage, only the PhD topic number and title are shown. Full topic descriptions, along with the possibility to submit an application, will become available when the call opens on June 22nd. The application window will run from **June 22nd to July 8th, 2026**.

The PhD topics are grouped into three research domains: Compute technologies & systems, Industry & Consumer, Health.

Compute technologies & systems

2026-017	Thermogalvanic chip cooling
2026-022	[NanoIC topic] Reliability of semiconducting oxides: the last roadblock for memory applications
2026-031	Wireless communications enhanced by distributed movable antennas
2026-041	[NanoIC topic] Improving the success rate of Atom Probe Analysis
2026-043	Acoustically-Enhanced Heat Transfer for Electronics Cooling
2026-048	Alleviating Thermal Challenges In Angstrom Nodes: Paving The Way For 3D Integrated Circuits (3D-ICs) of The Future
2026-051	[NanoIC topic] Backside technology circuit boosters for SRAM scaling
2026-058	Explainable Neurosymbolic Algorithms for Process Optimization in Semiconductor Manufacturing
2026-070	Mechanical stability of advanced nano-interconnects using pico-indentation
2026-073	Model-Based Reinforcement Learning for Scheduling Optimization in Semiconductor manufacturing (FAB) Environment
2026-088	Design automation for load modulated GaN power amplifiers
2026-096	Use Nothing, Leak Nothing: Energy-Efficient AI That Keeps Its Secrets
2026-102	Large-Scale GPU Clusters based on Silicon Photonic Network
2026-103	Co-Design of AI-Accelerated HPC Architectures for Scientific Computing
2026-113	Data Authenticity at the Edge in the Age of Generative AI
2026-131	[NanoIC topic] Mathematical Statistical methods for ML algorithms for EUVL
2026-133	Exploration of scale-up and scale-out VPUs in open-source SoCs
2026-157	Low-power and low-cost silicon photonic interconnects
2026-161	Multiscale Thermal Investigations of High Thermal Conductivity Heat Spreaders for Advanced Microelectronic Packages
2026-180	PhD position in microfluidics; Study of capillary underfill process for packaging optical interconnects into HPC & AI compute systems
2026-192	PhD position in electronics cooling; Engineered nanostructured surfaces for improved immersion cooling solutions with applications to HPC/AI data centers
2026-198	Ga2O3-based RF power devices with thermal management

2026-199	Molecular layer deposition of organic–inorganic hybrid films as novel patterning materials
2026-202	[NanoIC topic] Computer Vision for Defect Inspection and Metrology: Solving Semiconductor Manufacturing Challenges towards Advanced Process Control using Machine Learning
2026-204	Interface Engineering and Microstructure Control in Thermocompression Bonding for 3D ICs
2026-208	[NanoIC topic] Sustainable Design-Technology Co-Optimization for Advanced Technologies
2026-213	Transceiver architectures for cellular communications in the FR3 band
2026-217	Design-Technology Co-Optimization for Devices in the CMOS2.0 Era
2026-219	[NanoIC topic] Advancing Ultrasonic Inspection for Voids in Heterogeneously Integrated Semiconductor Devices
2026-222	[NanoIC topic] Inline metrology with Atomic Force Microscopy: from homogeneous smooth surfaces to high-aspect-ratio multi-material devices
2026-224	[NanoIC topic] Chemistry and Confinement-Driven Interactions of Sub-10 nm Particles at Interfaces

Industry & Consumer

2026-042	Shape Morphing Actuation in Thin Film Kirigami-Inspired Micro-robotics
2026-057	Photonic integrated solid-state lasers for scalable quantum systems
2026-104	Advancing Diamond-Based Quantum Technologies
2026-121	Near/in-sensor computing for edge AI
2026-128	Gain modulation in thin film lasers

Health

2026-037	Exploring 3D- μ EIT platform for dynamic, label-free, and non-invasive 3D tracking of organoid development and disease progression
2026-100	CMOS-integrated 2D-fluidics for high-throughput single-biomolecule transport and sensing
2026-147	AI-assisted High-Framerate Speckle Image Analysis

More information

If you have any questions, you may find the answer on our [FAQ page](#), where we have collected the most common questions.

If not, you are always welcome to reach out to us via phd@imec.be

We look forward to receiving your application once the call opens on June 22nd, 2026.