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## 1. Latest achievement of international cooperation through the eyes of the ICOS coordinator

### Why is international cooperation a key component in shaping the future of semiconductors?

International cooperation is key for strengthening complex supply and value chains, speeding up technological innovation, reducing cost by avoiding duplicated research, and is encouraged by the new strategies of leading semiconductor countries.

### What is the anticipated impact of this project on the European ecosystem, including industries, academics and policy makers?

ICOS is a central instrument to generate impact for the European ecosystems and to support the EC for international cooperation by: providing advice to the European Commission on joint research and other cooperation initiatives on specific topics with selected leading semiconductor countries, based on well documented analysis of value chains, important technologies and mutual advantages of potential collaboration ; offering support in their implementation by organizing joint international workshops on defined topics ; initiating dialogue with leading Institutions in the world ; strengthening European capacities in key parts of digital and future supply and value chains ; allowing to invest in early discovery and industrial uptake of new technologies ; supporting the exchange of young talents and the development of skills.



Francis Balestra, ICOS coordinator - © Linksiium

### What have been the project's most significant achievements so far?

ICOS has achieved significant activities so far, e.g.: Economic analysis of the EU and International semiconductor ecosystem, highlighting strategic objectives, industrial strengths and gaps, dependencies and market opportunities ; Determination of the generic challenges of the semiconductor field and the associated options to mitigate those challenges through international cooperation ; Identification of next-generation and emerging technologies in advanced computation and functionalities ; Recommendations of research topics and formats for international cooperation ; Organisation of international Workshops for matchmaking and supporting the implementation of digital partnerships.



## 2. Strengthening Global Semiconductor Cooperation:

EU-India, EU-South Korea and EU-Japan Workshops

In 2024, the ICOS project played a pivotal role in fostering international cooperation in the semiconductor sector by organizing two key workshops, strengthening ties between the European Union and Semiconductors leading countries: India and South Korea.

As part of the digital partnership established in June 2023 between South Korea and the European Commission, the **first EU-South Korea Joint Researchers Forum on Semiconductors** took place in Brussels on March 25-26, 2024. The event gathered leading researchers from both regions to exchange insights and explore collaboration opportunities. High-level representatives, including the Minister of Science and ICT of South Korea, Mr. Lee Jong Ho, and Ms. Lucilla Sioli, Director of CONNECT A, participated in discussions that highlighted the strategic importance of EU-South Korea cooperation in the semiconductor area.



EU-South Korea Joint Researchers Forum on Semiconductors in Brussels with key representatives from the European Commission, the Chips JU, ICOS, the Minister of Science and ICT, and the Ambassador of ROK in Brussels. © SINANO

The workshop served as a platform for researchers to present their work, engage in panel discussions, and strengthen academic and industrial partnerships.

Similarly, following the establishment of the EU-India Trade and Technology Council in February 2023 and the signing of a Memorandum of Understanding on Semiconductors in November 2023, the **first EU-India Joint Researchers Workshop on Semiconductors** was held in Brussels on October 9, 2024, hosted by ICOS.

This event brought together industry leaders, academics, and policymakers to foster dialogue on advancing semiconductor cooperation. Discussions emphasized the complementarity between the Indian and European semiconductor ecosystems, the importance of international collaboration in addressing industry challenges, and the role of investment in strengthening supply chains. The policy session, which opened the workshop, reaffirmed the commitment of both governments to building a strong and resilient semiconductor ecosystem through joint initiatives.



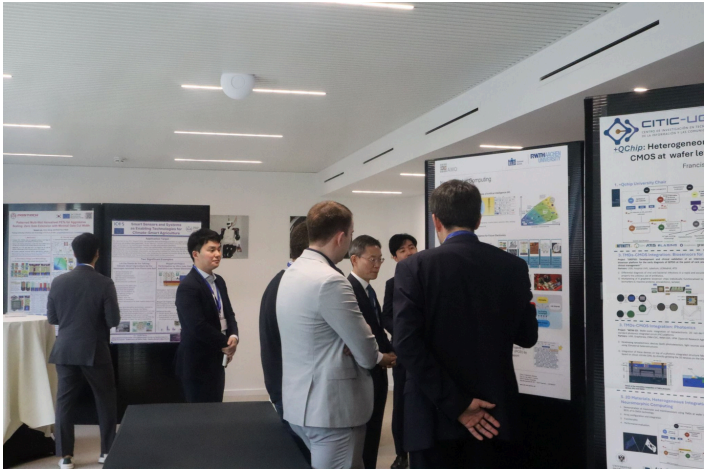
EU-ROK Joint Researchers Forum On Semiconductors. Group photo. © SiNANO



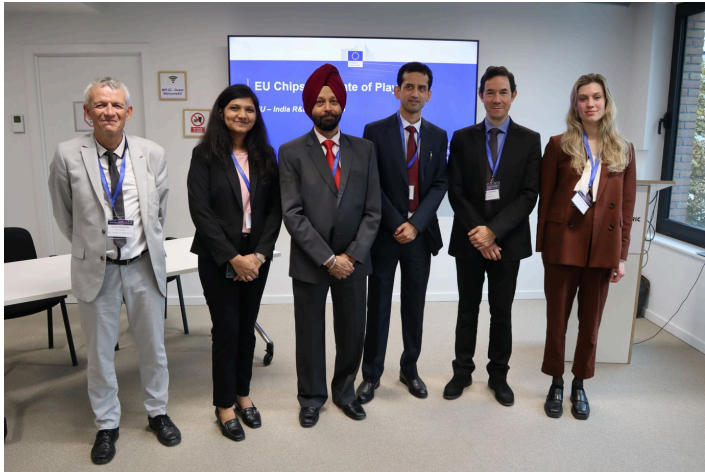
” *These workshops marked important steps in deepening EU-India, EU-Japan and EU-South Korea collaborations, reinforcing global semiconductor partnerships and laying the foundation for future research and innovation in the sector. It also positions ICOS as a facilitator of international cooperation in semiconductors.* “

**In 2023, ICOS organized a specific joint EU-Japanese session**, during the first ICOS workshop dedicated to “Sustainable Electronics & International Cooperation on Semiconductors”, giving an overview of the Japanese semiconductor ecosystem as well as discussing trends and international projects. This event, organised in hybrid session, gathered experts from Japan from the Ministry of Economy, Trade and Industry, Tokyo University, RENESAS, together with experts from DG-Connect, CEA-Leti, CNRS and Bosch.

Following the **EU-Japan Cooperation on Semiconductors experts workshop, in July 2024**, jointly organised with the European Commission, ICOS coordinates and writes the one-pagers for the 3 joint Research & Innovation selected topics on Sustainable Manufacturing, Heterogeneous Integration and Packaging and Cutting-edge process technologies including our proposition for the selection of the seven highest priorities for each one-pager.



Poster Session - First EU-India Joint Researchers Workshop on semiconductors. © SiNANO



Policy Session - First EU-India Joint Researchers Workshop on semiconductors. © SiNANO



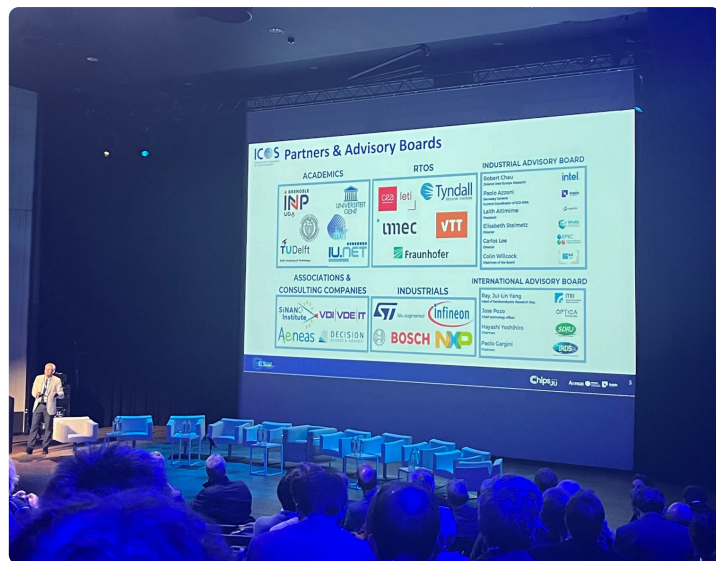
### 3. Keynote talk and booth at EF ECS 2024

The ICOS project had a strong presence at EF ECS 2024 featuring both a dedicated booth and a keynote address during the Plenary Session.

Held in Ghent, on December 5-6th 2024, this event brought together industry leaders, policymakers, researchers and other stakeholders which are driving the semiconductors ecosystem. This year, the event gathered more than 700 people from Europe and further, present to exchange on the future of this industry. Francis Balestra, ICOS coordinator, had the opportunity to present the ICOS project as a keynote speaker during the Plenary Session “Chips for Europe Initiative: strengthening EU competitiveness”.

He outlined the project's key objectives and the major outcomes achieved during the first half of this Horizon Europe initiative. His presentation highlighted several key findings, including the main topics and countries driving international cooperation, an economic landscape analysis of the semiconductor industry, and an assessment of industrial ecosystems—identifying strengths and weaknesses in the EU and other leading regions.

“*ICOS presence at EF ECS reaffirmed its commitment to studying the global semiconductor landscape and provided consortium members the opportunity to engage and exchange ideas with industry and research leaders.*”



EF ECS 2024 - Francis Balestra - © SiNANO

He also addressed market growth projections for the next decade, opportunities for emerging markets, and Europe's critical dependencies on the US and Asia.

Additionally, he presented insights into the most promising technologies in advanced computing and functionalities, their applications, and the challenges and potential solutions for emerging semiconductor technologies. The analysis of Europe's technological strengths and gaps, along with the identification of leading countries for collaboration, was also discussed, emphasizing the expected impact of ICOS on the European semiconductor landscape.

The booth welcomes visitors eager to further explore the project, especially after the keynote presentation. It was a good opportunity to exchange insights on the diverse perspectives of stakeholders present at the event and to showcase the project's results so far.



## 4. Discover the first public results

In order to ensure that the outcomes of the actions conducted in the project are used by a range of people, including scientific community, industry, policymakers, European Commission and governmental authorities, ICOS has published several reports and whitepapers.

Comprising different sections with different objectives and targets, we have produced reports in the technical and economic fields, as well as perspectives on generic challenges for EU chip industry.

Two reports, on **Advanced computing and Advanced functionality** respectively, highlight the most promising technologies in these areas for various applications. They are based on European and International Roadmaps, as well as insights from previous studies, knowledge from the consortium and partner network, desk research, and brainstorming sessions.

An **economic analysis of the EU and international semiconductor ecosystem** was also carried out to provide a global picture of the current situation and relationships within the semiconductor industry, to identify the EU's economic and industrial strengths and weaknesses, technological competencies, strategic dependencies and market structures in order to identify opportunities for cooperation.

Finally, ICOS published a Whitepaper in which 15 **generic challenges for international cooperation in the Semiconductor Field** are addressed and discussed. Based on consultation with a wide range of stakeholders, including feedback from the European semiconductor community, the report ranks these challenges in terms of both criticality and need for international cooperation. Of all challenges, critical dependence on non-EU chip manufacturer(s) was seen as the most important challenge for Europe.

## Key results



**5. Upcoming events (2025)**

**Don't miss our upcoming events in 2025.** A unique opportunity to connect researchers and international stakeholders to support research, enhance global collaboration, and remove barriers to the development of the semiconductor industry in Europe.

**KEY DATES**

**Workshop - Key Emerging Technologies for future Industrial Applications**

May 12-13th 2025 - Warsaw

[Registration open](#)



**2nd EU-South Korea Joint Semiconductor Researchers Forum**

June 16th - South Korea (Jeju Island)

restricted access: contact us

**ICOS Final event - Side event of EF ECS - European Forum for Electronic Components and Systems 2025**

December 2025

**1st EU-Singapore Joint Researchers Forum on Semiconductors**

Date will be confirmed soon

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