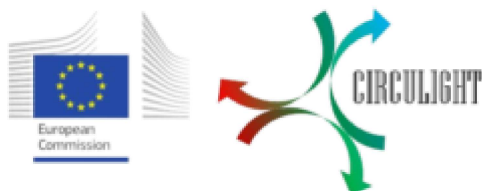


Editorial : this newsletter is published by the Circulight consortium on a biannual basis to inform you of the project's original scientific results and to popularize the underlying developed technology.



CIRCULATING LIGHT ON ANY PHOTONIC PLATFORM

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Progress Meetings and Milestones

Eindhoven Progress Meeting (October 2024):

The consortium gathered at TU/e to review project milestones and future directions. Key discussions included the status of deliverables, such as the Data Management Plan, the roadmap for MO material development, and strategies for enhanced dissemination. Partners also toured the TU/e labs, showcasing cutting-edge progress in material and technological processes.



Industrial Advisory Board Updates

We held our first Industry Advisory Board (IAB) meeting, bringing together leaders from top companies like STMicroelectronics and Bright Photonics. Their insights are helping us refine our technology to meet real-world needs. Highlights included discussions on manufacturability, integration strategies, and potential industry applications.

Science Corner

As mentioned in the previous letter, the CIRCULIGHT circulator principle is based on the magneto-bi-plasmonic (MBP) effect: *what is it?* MBP effect results from a combination of propagative plasmonic modes coupling and transverse magneto-optical Kerr effect. This magneto-optical effect induces a different optical confinement of each coupled mode, and this occurs in an opposite manner in forward and backward propagation direction: in figure below, the magneto-optical material (red) with magnetization M is positioned between two gold layers (yellow); the profile of the coupled plasmonic modes depends on the propagation direction (blue and green). This non-reciprocity is exploited to design the optical circulator.



In the next CIRCULIGHT letter, we will explain other scientific aspects developed with the project: fabrication of magneto-optical nanoparticles and sol-gel, design of the circulator, integration process platforms, advanced material and devices characterization....

Mark Your Calendars!

- Come meet us at **2025 IEEE Silicon Photonics Conference (SiPhotonics)**. This is a major event in the photonics world, and we're excited to share our innovations.
- Workshops and More: We're planning exciting workshops and presentations, starting in Eindhoven in late 2025.

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