

## **Automated Robotic Micro-Assembly for Integrated Optics**

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### ***Abstract***

Despite the tremendous needs for hybrid optical devices integrating heterogeneous basic blocks in a 3D way, current parallel based technologies face an intrinsic flexibility barrier that drastically limits possibilities. Moreover, despite many interest for small scale integrated optical devices, currently used manual approaches also face a strong dexterity barrier.

The talk will introduce innovative microrobotic tools and methods aiming at breaking this barrier by considering components one by one independently once they are manufactured. This serial approach appears original but clearly aims at bringing a high flexibility, targeting high-added value products through opening to many original and inventive combinations of basic components to the dynamic manipulation and assembly of optical components. The talk will provide key approaches and results to manufacture integrated optical devices based on robotics at small scales.

### ***Biography***

Cédric Clévy is currently an associate professor at the FEMTO-ST Institute in France where he leads the nanorobotics team. His research activities consist in investigating innovative micromechatronic and microrobotics principles for integrated optical microsystems and notably conducted to the creation of the Percipio-Robotics company in 2011. Cédric Clévy is an active member of the IEEE-RAS Technical Committee on Micro/Nano Robotics and Automation and the co-leader of the multi-scale manipulation research thematic of the French national research center.