Postdoctoral position opening (from Sept.2020)

Keywords: Optics, micro and nanophotonics, arrayed detectors, electromagnetic simulation of nanostructures

The following postdoctoral position concerns a project between ST Microelectronics and Laboratoire Charles Fabry (Université Paris-Saclay, Institut d'Optique Graduate School, CNRS) that runs from 2020 to 2022. The job duration is 12 months. The position will be located at Palaiseau, France.

The project hinges on the added value of cameras that is expected to arise from improved multispectral functions. However, the design of devices (filters…) to realize these advanced functions must integrate technological constraints such as minimization of the number of manufacturing steps, parallel manufacturing by planar nanostructuring avoiding the deposition of multiple materials…

The objective of the postdoctoral work will be to design nanostuctures optimized in this context, particularly in terms of transmission, which can replace the current expensive solutions, or which can compensate for known spectral defects, such as the lack of sensitivity in the near infrared. A basic example is shown in the figure at the bottom of this page.

The design will be conducted with the help of electromagnetic simulations (Fourier modal method, RCWA, Finite Elements, FDTD…). Sustained interactions with R&D teams in ST Microelectronics will be an important of the work. The salary will follow the guidelines of CNRS postdoctoral positions.

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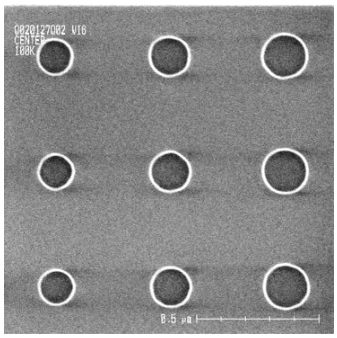

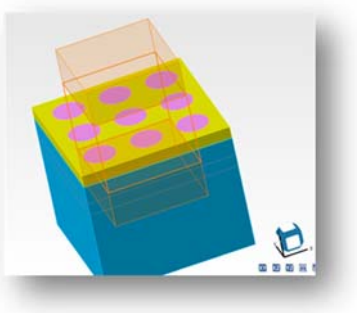

Left side : example of etched nanostructures (80-120 nm holes) : right side: elementary layout for simulation