

# Soutenance de thèse

Judi 21 juillet  
14h00  
Amphithéâtre

## «Subwavelength silicon photonic nanostructures for applications in the near-IR and mid-IR»

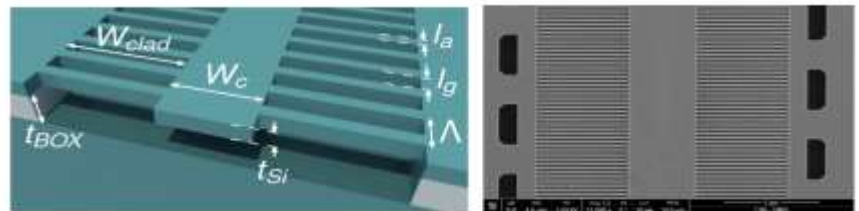
Thi Thuy Duong DINH

### Jury members :

Philippe DELAYE. Directeur de recherche, Institut d'Optique. (Université Paris-Saclay) Président  
Gonzalo WANGÜEMERT-PÉREZ. Professor, Málaga University Rapporteur & Examineur  
Emilien PEYTAVIT. Chargé de recherche, Laboratoire IEMN Rapporteur & Examineur  
Loïc BODIOU. Maître de conférences, Université de Rennes 1 Examineur  
Joan RAMIREZ Cadre scientifique, Nokia Bell Labs/ III-V lab Examineur  
Carlos ALONSO RAMOS Chargé de recherche, C2N-Université Paris-Saclay Directeur de thèse

### Abstract :

Silicon photonics holds the promise for large-scale and low-cost production of high-performance optoelectronic circuits. Driven by the impressive technology development in the recent years, silicon photonics is expanding its frontiers towards new applications beyond datacom, including among others, sensing, radio-over-fiber and quantum. Aiming to meet the requirements of these new applications, the Si photonics community is exploring alternative wavelength ranges and physical phenomena, with a particular interest in the mid-infrared (2-20  $\mu\text{m}$  wavelength), and Kerr nonlinearities. Silicon



Subwavelength silicon membrane waveguides for operation in the near-IR and mid-IR

photonics holds the promise for large-scale and low-cost production of high-performance optoelectronic circuits. Driven by the impressive technology development in the recent years, silicon photonics is expanding its frontiers towards new applications beyond datacom, including among others, sensing, radio-over-fiber and quantum. Aiming to meet the requirements of these new applications, the Si photonics community is exploring alternative wavelength ranges and physical phenomena, with a particular interest in the mid-infrared (2-20  $\mu\text{m}$  wavelength), and Kerr nonlinearities.