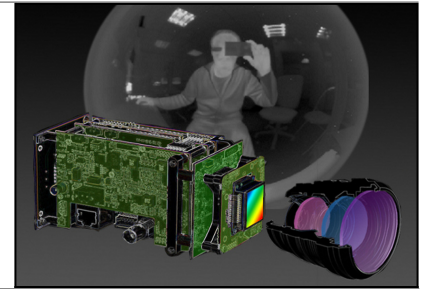


SC11 | Design of infrared cameras



NIVEAU : AVANCÉ

Publics : Engineers of companies and administrations involved in defense, surveillance, aerospace or astronomy applications, wishing to master the analyse and the design of infrared cameras

Prérequis : Basic knowledge corresponding to EF2 - Basics of optics

Responsable(s) pédagogique(s) : Isabelle Ribet - Experte Onera, enseignante à l'Institut d'Optique

Langue de la formation : Français

Capacité maximum : 12

Prix : 1820€ HT - **Durée :** 4 days - 28 h

Objectifs

- ▶ Have an overview of the problematic of infrared cameras design
- ▶ Discover the key parameters associated to this design
- ▶ Discover the state-of-the-art of components and modules
- ▶ Be able to specify, design and evaluate infrared cameras (cooled or uncooled)

Prochaines sessions

- ▶ 29 septembre 2020 au 02 octobre 2020 - Palaiseau

Thèmes abordés

Infrared radiometry

- ▶ Thermal infrared

Infrared detectors

- ▶ Characterization, main technologies (cooled or uncooled)
- ▶ Proxy electronics
- ▶ Cryogeny

Dimensioning of an infrared system, link budget

- ▶ Design of an infrared system, performance predictions
- ▶ Infrared image visualisation



SC11 | Design of infrared cameras

Le programme

Infrared detection

- ▶ Thermal infrared
- ▶ Infrared detectors: principles
- ▶ Infrared technologies (cooled and uncooled)
- ▶ Proxy electronics
- ▶ Infrared detectors characterisation

Design of an infrared system

- ▶ Design of infrared optics
- ▶ Infrared image visualisation
- ▶ Design of an infrared system
- ▶ Performance prediction
- ▶ Exercice: design of a cooled infrared camera

Labwork

- ▶ Characterisation of a cooled photodiode
- ▶ Characterisation of an uncooled camera

Méthodologie et évaluation

Lectures and exercices

Interactive demonstrations

Labwork