

C05 | Thin layers optics: introduction



NIVEAU : DÉBUTANT

Publics : Senior technicians or engineers wishing to specify, design, realize, characterize or use optical thin film components

Prérequis : None

Responsable(s) pédagogique(s) : Franck Delmotte - Enseignant-chercheur à l'Institut d'Optique

Langue de la formation : Français

Capacité maximum : 12

Prix : 1100€ HT - **Durée :** 2 days - 14 h

Objectifs

- Understand the physical principles of optical components based on thin layers
- Learn to establish a specification for the different optical thin film components
- Design stacks of thin optical layers for simple functions
- Estimate the robustness of a component with respect to experimental errors and associated production efficiency
- Choose an appropriate filing or characterization method to address a specific problem

Prochaines sessions

- 15 juin 2021 au 16 juin 2021 - Palaiseau

Thèmes abordés

Fundamental principles of thin optical layers

Optical functions: Anti-glare, multi-dielectric mirrors, filters, dichroic, separators, polarizers

Thin film deposition technique (PVD and CVD methods)

Characterization methods for optical thin films



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Le programme

Fundamentals of optical thin films

- ▶ Calculations of optical properties of thin films
- ▶ Thin film deposits: comparison of the main methods
- ▶ Optical thin film analysis techniques

Optical thin film coatings design

- ▶ Materials for substrates and thin layers
- ▶ The main optical thin film components
- ▶ Specification and optimization of optical coatings
- ▶ Control of optical coatings

Put into practice with simulation software

- ▶ Numerical simulation of the main optical functions
- ▶ Optimization of optical thin film coatings to meet specifications

Méthodologie et évaluation

Lectures and exercises

Practical work on a computer and visit of a of Thin Layer Optics laboratory