

# VITALII KHODNEVYCH

## PhD in physics

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## SUMMARY

- Forward-thinking research scientist with a strong background in physics and electronics, leading to a successful development of state-of-the-art optronic instruments and numerical models.
- Strong skills in design and development of optoelectronic devices: optics and detection, digital and analog electronics, numerical simulation, and embedded engineering.
- Creative and self-motivated individual with easy-integration in a multicultural environment with a unique combination of detail-oriented mindset, driven personality, analytical skills and proven ability to meet tight deadlines by working in a fast-paced work environment leading to a successful completion of various complex problems in a short time and with excellent quality.

## WORK EXPERIENCE

### Research engineer in optics

#### IRT Saint Exupéry

2020 - now, CDI    Biot, France

Activities are dedicated to the development, validation, and test of compact gas imager for the detection of various gases in the atmosphere based on static Fourier spectrometer:

- Stray light model development and analysis (FRED, MatLab). Stray light correction algorithms development.
- Radiometric and first-order optical analysis. Optical components and system design.
- Analytical and numerical models development: optical, inverse, ML.

### PhD student

#### Observatoire de la Côte d'Azur, ARTEMIS lab

2017 - 2020    Nice, France

- Excellent project management, commercial acumen, and fundamental physics education as evidenced by development, in the short term, of two state-of-the-art interferometric instruments (at  $1.06 \mu m$  and  $1.55 \mu m$ ) for backscattering measurements (including free space component design and signal processing routines), resulting in a poster at ICSO2018 and a talk at Optro2020 conferences.
- Market and product knowledge with expertise in electronics design, as evidenced by developing a new contamination control system for a clean room, which is in use in Observatory Cote d'Azur since summer 2019.
- Complex problem solving and advanced skills in scientific computing resulting in creating a unified numerical model of coherent scattering, which was presented at the Optro2020 conference.
- Self-motivation, responsibility, and ability to work under pressure, together with profound knowledge in stray light analysis accompanied by experimental skills in fiber and free-space optics, resulting in a successful PhD project.

## EDUCATION

### Master 2 Grands Instruments (Major de promotion)

#### Université Paris-Saclay

2016 - 2017    Paris, France

### Bachelor and Master in Nuclear and High Energy Physics

#### Taras Shevchenko National University of Kyiv

2010 - 2016    Kyiv, Ukraine

## TRAININGS

- International school on space optics, 2019 (Rome, Italy)
- Laser security training at CERLA, 2019 (Lille, France)
- Gathering of the Federation of Plasma and Fusion Sciences Training, 2017 (Bordeaux, France)
- Four internships at Laboratoire de l'Accélérateur Linéaire in Orsay (2014-2017)

## AWARDS

- Master scholarship 2016: Bourses du Gouvernement Français and Université Paris-Sud
- Doctoral scholarship 2017: Thales Alenia Space and PACA region
- Finalist of Pierre Laffitte prize in 2019.

## PUBLICATIONS

- *Stray light estimates due to micrometeoroid damage in space optics, application to the LISA telescope*, SPIE JATIS, 2020 DOI
- Full list

## SKILLS

C/C++    Python    MATLAB    FRED  
Zemax    SolidWorks

## LANGUAGES

Ukrainian    English (C1)    French (B1)