

# Marie Curie Early Stage Training Ph.D. Position

## JOB DESCRIPTION

**Job Title:** Ph.D. Position within Marie Skłodowska-Curie Innovative Training Network – European Industrial Doctorate “xCLASS” – Next generation Compact Lightsource And Spectrometer Systems

### Job Summary:

Candidates with a background in photonics and/or signal processing are invited to apply to work at the Brussels Photonics Team B-PHOT, under supervision of Professor Heidi Ottevaere, at Vrije Universiteit Brussel – VUB and Dr. Willem Hoving, from Anteryon BV (Eindhoven, The Netherlands).

Highly competitive and attractive salary are offered, plus mobility and family allowances as applicable. The successful candidate will be part of the Marie Skłodowska-Curie Innovative Training Network (ITN), xCLASS, funded by the European Union under Grant Agreement 765635.

4 Early Stage Researchers (ESRs) will be hosted across this network and will perform research at the Brussels Photonics Team (B-PHOT) of the Vrije Universiteit Brussel (VUB), a renowned research group in the field of photonics and spectroscopy, or the Electronics and Informatics Department (ETRO) of the Vrije Universiteit Brussel, experts in sensor read-out and data processing, and at Anteryon (ANT), an innovative industrial producer of medium- and high-volume optical components located in Eindhoven, The Netherlands.

### Job Description:

The objective of the PhD is to contribute to the development of a disruptive extremely compact, yet high-performance optical spectrometer system for the visible and infrared wavelength range, consisting of a novel micro-spectrometer platform and a miniaturized tuneable light source, optimized for high-volume production and broadly applicable in various application domains such as health care, quality control and food safety monitoring. A combination of optical system and advanced image reconstruction methods will be deployed for reaching this objective.

**ESR 2: This PhD student will particularly investigate a modified Fastie-Ebert configuration to develop a compact optical spectrometer combining both refractive and diffractive optical components. The student will be located at Vrije Universiteit Brussels-B-PHOT and have 3 secondments at Anteryon.**

The candidate must have a Master degree in Physics/Electrical Engineering and Electronics, preferably with majors in Photonics. The candidate should have good knowledge and interest in both experimental and theoretical modelling work. Interest in the broader field of light sources and measurement technologies/optical spectroscopy is required. Knowledge in the field of tunable light sources and a track record in scientific publications are great assets. Good communication skills in English (both written and conversational) are indispensable.

Candidates will be required to meet the Marie Skłodowska-Curie Early Stage Researcher eligibility criteria: (<http://ec.europa.eu/research/mariecurieactions/>). In particular, at the time of appointment candidates must have had less than four years full-time equivalent research experience and must not have already obtained a PhD. Additionally, they must not have resided in Belgium for more than 12 months in the three years immediately before the appointment. This excludes short stays such as holidays or compulsory national service.

Enquiries and applications may be addressed to Mrs. Majorie Jammaers ([Majorie.Jammaers@vub.be](mailto:Majorie.Jammaers@vub.be)).

The application must be accompanied with the following documents in PDF format: statement of professional interest, CV, Transcripts of records from university/university college, example of technical writing, e.g., thesis, essay, course report or scientific paper.

Deadline for applications: 15<sup>th</sup> December 2017.

Anticipated start date: no later than 1<sup>st</sup> March 2018.

**Nr. of positions available:** 1  
**Main Research Field:** Engineering  
**Sub Research Field:** Electronic Engineering  
**Career Stage:** Early stage researcher (0-4 yrs)  
**Research Profile:** First Stage Researcher (R1)

**Benefits:**

You will receive a contract of employment as a full-time researcher for the relevant period of your appointment, which will include applicable benefits in the host country which can be either Belgium or the Netherlands depending on the research task within the overall project. The grant and salary, including social security coverage, complies with the Marie Skłodowska-Curie PhD fellowship scheme for early career researchers as described on the following webpage:

[ec.europa.eu/research/mariecurieactions/about-msca/actions/itn/index\\_en.htm](http://ec.europa.eu/research/mariecurieactions/about-msca/actions/itn/index_en.htm)

This PhD position is part of an Innovative Training Network (ITN) and the ESR to be employed will also benefit from a personal career development plan with targeted training measures and participation in a range of network activities organized by the consortium partners.

You will be registered for the doctoral training program of the Doctoral School of Natural Sciences and (Bioscience) Engineering at VUB (<https://my.vub.ac.be/phd/nse>), you will have 35 vacation days, a public transport pass (home-to-work) and access to the university's sporting facilities.

Researchers moving to Belgium can take full advantage of the country's high standard of living, international orientation and quality of life: housing, healthcare, cultural life, education and infrastructure are all excellent in the Capital of Europe.

**Comment/web site for additional job details:**

This position is within the framework of the multi-disciplinary ITN xCLASS project with Vrije Universiteit Brussel (VUB) and Anteryon BV (ANT) as core partners.

**VUB B-PHOT** is a leading center of expertise in optics and photonics in domains such as photonic lab-on-chips, optical spectroscopy, free-form optics, optical fiber sensors, non-linear optics and semiconductor micro-lasers. With over 25 years of experience B-PHOT is internationally recognized for its fundamental and applied research. A multidisciplinary team of 50 highly skilled researchers and engineers push the boundaries of light technology for industrial innovation applied in health care, food safety, IoT, telecom, green energy, aerospace, mobility and Industry 4.0.

**VUB ETRO** (Electronics and Informatics department) belongs to the Faculty of Engineering Sciences at the VUB and is part of the strategic research center imec. ETRO has built a large international

collaboration network with industrial partners, academic institutions and R&D centres, and participates in a numerous fundamental, strategic and applied research projects in these domains. ETRO performs research on the representation, transmission, analysis, quality assessment and visualization of multidimensional signals. In multi-dimensional data compression, ETRO has been active for more than 20 years in various research areas, including predictive and transform-based coding of images, video and meshes, near-lossless compression, multiple description coding, joint source and channel coding, error concealment, distributed video coding, visual quality assessment, and optimized media transmission over networks.

**Anteryon BV** is an innovative industrial producer of medium- and high-volume optical components located in Eindhoven, The Netherlands. It spun out from Philips Electronics in 2006 and currently realizes a turnover of 12M€ with 125 employees. Anteryon has a track record of more than 30 years in the R&D and manufacturing of optical systems and optical solutions, both on component and product level. The core technologies of Anteryon are glass replication, surface structuring and optomechanical/optoelectronic assembly. Our first generation mass-manufactured replicated lenses were used more than 25 years ago in optical pick-up heads for CD and DVD players. Today's main products of Anteryon are high-quality, low-power diode laser modules, beam scanning systems and optoelectronic assemblies employing replicated optics as key components.

EU RESEARCH FRAMEWORK PROGRAMME
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**Is the job funded through the EU Research Framework Programme:** H2020/Marie Curie Actions

**Advert number:** xCLASS ESR02

JOB DETAILS
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<b>Type of Contract:</b>	Temporary
<b>Status:</b>	Full-time
<b>Working hours (hours per week or free text):</b>	37,8
<b>Science4Refugees:</b>	No
<b>Company/Institute:</b>	Vrije Universiteit Brussel
<b>Country:</b>	Belgium
<b>Community Language:</b>	Dutch
<b>State/Province:</b>	Brussels Capital Region
<b>City:</b>	Brussels
<b>Postal Code:</b>	1050
<b>Street:</b>	Pleinlaan 2

ORGANISATION/INSTITUTE CONTACT DATA
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<b>Organisation:</b>	Vrije Universiteit Brussel
<b>Organisation/Institute Type:</b>	Academic
<b>Country:</b>	Belgium
<b>City:</b>	Brussels
<b>State/Province:</b>	Brussels Capital Region
<b>Postal code:</b>	1050
<b>Street:</b>	Pleinlaan 2
<b>E-mail:</b>	Majorie.Jammaers@vub.be
<b>Website:</b>	<a href="http://www.b-phot.org">http://www.b-phot.org</a>
<b>Phone:</b>	+3226293453

APPLICATION DETAILS
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<b>Envisaged Job Starting Date:</b>	01/03/2018
<b>Application Deadline:</b>	15/11/2017

REQUIRED EDUCATION LEVEL
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<b>Degree:</b>	Master Degree or Equivalent
<b>Degree Field:</b>	Engineering

REQUIRED LANGUAGES (optional)
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<b>Language:</b>	English
<b>Language Level:</b>	Excellent

ADDITIONAL REQUIREMENTS
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**Skill:**

The candidate should have excellent communication skills in English (both in speaking and writing), should be able to work both in a team and independently, should demonstrate initiative and should be proactive in the project.

**Specific Requirements:**

Candidates will be required to meet the Marie Skłodowska-Curie Early Stage Researcher eligibility criteria: (<http://ec.europa.eu/research/mariecurieactions/>). In particular, at the time of appointment candidates must have had less than four years full-time equivalent research experience and must not have already obtained a PhD. Additionally, they must not have resided in Belgium for more than 12 months in the three years immediately before the appointment. This excludes short stays such as holidays or compulsory national service.