



CENTRAL
EUROPEAN INSTITUTE
OF TECHNOLOGY

The Director of Central European Institute of Technology
(CEITEC MU) opens a position in
MARIE-SKŁODOWSKA-CURIE EUROPEAN TRAINING NETWORK
LightDyNAMics

EARLY STAGE RESEARCHER ADVANCED COMPUTATIONAL STUDIES OF STRUCTURAL DYNAMICS OF DNA AND RNA SYSTEMS

Description

CEITEC is a scientific institute in the fields of life sciences, advanced materials and technologies whose aim is to establish itself as a recognized centre for basic as well as applied research. CEITEC offers a state-of-the-art infrastructure and great conditions to employ excellent researchers.

Our institute values diversity and promotes an inclusive working environment with the aim to support the best scientists.

An Early Stage Researcher position is available in Jiří Šponer lab (<http://www.ibp.cz/en/departments/structure-and-dynamics-of-nucleic-acids/info-about-the-department/>; CEITEC, Masaryk University, Brno, Czech Republic) to participate in research focused on Multiscale theoretical and computational studies (using explicit-solvent atomistic molecular dynamics simulation methods and quantum chemistry) of DNA and RNA molecules, and their molecular interactions with proteins and ligands, with a specific emphasis given to non-canonical molecules such as guanine quadruplexes or folded RNA molecules. The research can be focused on applications as well as method development, in the latter case with emphasis given to development and testing of the simulation force fields.

Requirements:

- Successful candidate must hold the equivalent of a Czech Master's degree (Mgr., Ing., MSc.) from an institution of recognized standing (four or five year undergraduate degree), must have no more than 4 years of full-time research experience, and must not have been awarded a doctoral degree at the time of recruitment
- Prior experience in computational studies of nucleic acids (preferable) or proteins, including a relevant research publication in the field, is requested
- Spent at least 2 whole years out of the last 3 outside the Czech Republic
- Good English language – spoken and written

Masaryk University, CEITEC - Central European Institute of Technology

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We offer:

- Enrolment in CEITEC PhD School (detailed information available at: <http://ls-phd.ceitec.cz/>) and a diverse training programme of the LightDyNAMics Marie Skłodowska-Curie European Training Network (MSCA-ETN)
- Interesting position in a dynamically expanding research institute
- An attractive salary and benefits package within the MSCA-ETN LightDyNAMics (2300 EUR gross salary plus 370 EUR family contribution if applicable). Current average gross salary in the Czech Republic is 28700 CZK (1130 EUR), minimum salary is 12.200 CZK (480 EUR)
- Background of a recognized and successful institution with supportive and international working environment
- Environment promoting interdisciplinarity and intersectorality of research
- Excellent in house computational facilities and direct collaboration with experimental laboratories
- Experienced research team covering a broad range of topics and computational methodologies
- Involvement in prestigious international ITN research training network
- Support with the relocation process (welcome office service)
- 6 weeks of paid holiday

Anticipated start date: September 2018

To apply please contact Olga Křížová on phd@ceitec.muni.cz

Information about Brno, Czech Republic

- The capital of South Moravian Region and the second largest city in the Czech Republic with a population of almost 400,000 people
- Modern, dynamic and fast growing centre of industry, trade, science, research and innovation with business incubators and centres of excellence in science
- A city of universities with more than 86,000 students
- More than 10,000 researchers; 2,200 IF publications/year; 600+ PhD graduates/year,
- 500 mil. EUR of R&D investment per year, more than 350 companies with in-house R&D,
- City of Gregor Mendel, the founder of genetics; the prestigious Mendel Lectures series takes place in Brno since 2003 (lectures of the world's top scientists, including Nobel Prize winners),
- [Quality of life index in 2016](#)

For further information about:

- CEITEC, please visit www.ceitec.eu
- CEITEC Welcome Office, please visit <http://www.ceitec.eu/ceitec-welcome-office/t1137>
- Masaryk University, please visit www.muni.cz
- Brno, please visit <http://www2.brno.cz/index.php?lan=en&nav01=20608&nav02=20617>

Masarykova univerzita, Středoevropský technologický institut

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About LightDyNAMics Marie-Skłodowska-Curie European Training Network:

Abstract: Light interaction with biomaterials is the driving mechanism of fundamental biological processes, from photosynthesis to DNA photodamage, and is a powerful tool in biomedicine for analytical, diagnostic and therapeutic purposes.

The main goal of LightDyNAMics is to achieve a complete understanding of the ultrafast dynamical processes at the molecular scale induced by UV light absorption in DNA, and to unveil the mechanisms leading to photodamage of the genetic code. At the same time, our project will transfer this knowledge on light-matter interaction to a broad class of optoelectronic materials, highly relevant for Europe's high-tech industries.

LightDyNAMics is an academia-industry research environment training 15 Early Stage Researchers (ESRs) by crossing the traditional border between theoretical and experimental expertise. This will be achieved by performing independent, yet interrelated and complementary research projects focussed on photoactivated dynamics of DNA, and by developing a variety of new spectroscopic and computational methods. For all the ESRs, personalised training in advanced techniques will be combined with a broad common interdisciplinary background on dynamical processes in bio-macromolecules.

The consortium brings together 10 leading academic groups with multidisciplinary expertise (chemistry, physics, biology) and a unique blend of experimental and computational skills. 6 innovative companies, from SMEs specialised in click-chemistry and in biosensors to a pharma industry, will be fully integrated in the research and training programme and help promote technological exploitation of its results.

LightDyNAMics will develop innovative molecular probes for DNA/protein interaction, paving the way to new diagnostic tools and new drugs. The understanding of light interaction with organic molecules will impact on basic sciences, from biochemistry to nanosciences, and on industrial applications ranging from healthcare to photonic technologies.

Partners: Consiglio Nazionale delle Ricerche, Istituto di Biostrutture e Bioimmagini (IT), Centre National de la Recherche Scientifique, Lasers, Interactions and Dynamics Laboratory (FR), University of Durham (UK), Kemijski Inštitut (SI), Ludwig-Maximilians-Universität München (DE), Masarykova Univerzita (CZ), Politecnico di Milano (IT), University College Dublin (IE), Università di Bologna (IT), Universität Wien (AT), AstraZeneca Ltd (UK), Baseclick GmbH (DE), Dynamic Biosensors GmbH (DE)

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