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Division A
Department A2
"Ultrafast XUV-Physics"

Dr. Oleg Kornilov

Department head

☎ 030 / 6392 1246

Email:
kornilov@mbi-berlin.de

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To whom it may concern

Letter of recommendation

My name is Oleg Kornilov. I'm the head of the department "Ultrafast X-ray Physics" at the Division A of Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Berlin, Germany. The main research direction of my department is development and application of XUV- and X-ray-based methods in femtosecond and attosecond time domains. Among the methods we have implemented recently is the femtosecond time-resolved photoelectron spectroscopy (TRPES) in liquid phase, which we apply to study relaxation of electronically excited molecules in solution. The investigations are mainly focused on biologically-relevant and bio-mimetic systems, such as amino acids, nucleobases and artificial biologically-inspired photoswitches.

It is my great pleasure to provide a recommendation letter to **Mr. Evgenii Ikonnikov**. I know Evgenii since 2016, when he visited my department as a recipient of the Russian-German Interdisciplinary Research Center (G-RISC) grant to work on the time-resolved photoelectron spectroscopy project in my lab. Already during this phase Evgenii showed himself as a very smart and hard-working student capable of both handling complicated experimental setups and versatile in data analysis and physical modeling. This short collaboration prompted us to offer Evgenii the position of a PhD student in my department and Free University of Berlin, which he accepted and joined the department in April 2017. Evgenii concluded the project in Summer 2020 and is currently finishing his PhD thesis with a provisional defense date in Summer 2021 (depending among other factors on the COVID situation).

The project of Evgenii was funded by a grant of the Deutsche Forschungs-gemeinschaft and devoted to the development of liquid phase time-resolved photoelectron spectroscopy and its application to a variety of molecules of biological interest. Evgenii was able to record for the first time the photoelectron spectra of aqueous amino acids, which are important building blocks of all proteins. He further investigate the structure of bio-mimetic photoswitches in close collaboration with the group of Prof. Stefan Haacke (Uni. Strasbourg) and time-resolved relaxation dynamics of a photoacid pyranine.

The novel methods used in the PhD project of Evgenii demand not only careful experimental work, but, among all, careful and versatile data analysis. Owing to small concentrations of bio-mimetic samples the experimental signals are weak calling for advanced techniques of statistical data analysis and knowledge of error propagation principles. Further, interpretation of the data is not possible without

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detailed physical modeling. All these aspects of the research program have been successfully implemented and applied by Evgenii in the course of his work on the aforementioned scientific topics. In line with the internal practices of our department Evgenii used Python in most situations: for statistical data analysis, modeling and, partially, data acquisition. In a number of cases he was also using Matlab, GNU Octave and LabView packages. In all these situation Evgenii was able to develop his codes either on his own or with minimal support from my side.

Evgenii is a self-sufficient and quickly learning researcher, who can quickly find his way in a novel problem, tackle it independently, or seek qualified help to optimize the output in favor of the team's progress. He is a very good communicator building close relationships with other members of the team as well as a good presenter with several contributions to international scientific conferences. Some of strongest personal traits of Evgenii is his reliability, whereby he quickly understands the problem at hand and follows through until the project is complete. It has been a great pleasure for me to work with Evgenii Ikonnikov throughout the past 4-5 years. I'm sure that he will be of great value to any team he joins and wish him all the best for his future career.

Yours sincerely,
Dr. Oleg Kornilov.