VS-2019/13

Memorandum of Understanding on
Collaborative Program on Development of High Power Lasers Technologies
for Industrial and Scientific Applications
between
Institute of Physics of the Czech Academy of Sciences, HiLASE Centre,
Czech Republic
and
St. Petersburg State University,
Russia

Purpose

This Memorandum of Understanding (MoU) provides the framework for scientific and technical exchanges between the Institute of Physics of the Czech Academy of Sciences, HiLASE Centre, with its registered seat Na Slovance 1999/2, 182 21 Prague 8, Czech Republic and represented by RNDr. Michael Prouza, Ph.D., director, Czech Republic (hereinafter referred to as "**FZU-HiLASE**") and **St. Petersburg State University**, Russia (hereinafter referred to as "**SPbU**"), with its registered seat at 7/9 Universitetskaya nab., St. Petersburg, 199034, Russia and represented by Sergey V. Andryushin, Vice Rector for International Affairs, acting on the basis of proxy dated 26/12/2018 № 28-21-503, in development of high power laser technologies for industrial and scientific applications. **FZU-HiLASE** and **SPbU** shall be together referred as "Parties", in this MoU.

Background

There exists a mutual interest between **FZU-HiLASE** and **SPbU** in the area of laser-matter interaction and applications of lasers in industry and research.

FZU-HiLASE represents an excellent technological infrastructure in the field of laser research and development on the European level. The highly efficient DPSSL systems based on thin disk and multi-slab architecture delivering up to 1 kW of average power in short and ultrashort pulses have been developed and are now available for user experiments at **FZU-HiLASE**.

SPbU has a strong focus on fundamental research in science, engineering and humanities. It has an excellent research infrastructure, which enables to perform investigations and to develop laser processing procedures in the fields of microelectronics, thin film deposition, material fabrication and characterization. SPbU has recently demonstrated breakthrough developments in laser-induced synthesis of the sensor-active microcomposites based on metals and their oxides.

Now it is necessary to cooperate for further development of advanced lasers and their industrial as well as scientific applications. In order to do that, it is agreed that Parties will work together in the areas mentioned above.

Objectives and outcomes of this MoU

- Cooperation on development of high power lasers and application stations
- Exchange of information on laser processing, micro-machining and laser technologies for industry under the terms of appropriate non – disclosure agreement to be concluded between Parties
- Cooperation in the development of methods of laser-assisted deposition of metals from metal-containing solutions
- Collaboration in investigation of pulsed laser ablation of materials in liquids
- Joint scientific experiments and relevant research activities
- Joint scientific publications
- Exchange of researchers

All of the above objectives and outcomes shall be referred as "Collaborative Work".

Management

It is the intent of the Parties to encourage through this MoU the respective Program Managers to promote the Collaborative Work in the area outlined above. The topics covered by this MoU are meant to be a statement of the starting conditions, and any extensions by the Program Managers are encouraged. Detailed implementation activities will depend on the level of funding available to the respective teams of Parties. In order to perform Collaborative Work duly, **FZU-HiLASE** will provide the laser systems and related infrastructure for joint experiments and **SPbU** will provide the necessary components and/or material and related infrastructure for joint experiments.

Should the Collaborative Work leads to detailed implementation activities, parties agree to negotiate and enter into a further separate agreement covering all the relevant topics such as, but not only, finances, intellectual property rights, governance structure.

Intellectual Property Rights

Parties agree that, in the event that the Collaborative Work leads to

- Creation of invention or any other technical solutions which could qualify for patent or any other industrial property right protection;

- Creation of any other output which could qualify for any other intellectual property rights protection other than those listed above,

a further separate agreement must be negotiated and agreed upon in each case. For the sake of clarity, it is hereby agreed that no patent application can be submitted without prior written approval of the other Party and any intention to submit patent application has to be discussed with and approved by the other Party in advance.

Compliance with Laws and Regulations

All Collaborative Work conducted in connection with this MoU shall be done in compliance with all applicable laws, regulations and guidelines, including those related to export controls, of the countries and institutions in which the Collaborative Work is conducted.

Duration

This MoU will last for five (5) years from the date of last Party's signature, with the option for extension by mutual agreement at the end of this period, and shall not be legally binding on both Parties.

Program Managers: Prof. Nadezhda M. Bulgakova **(FZU-HiLASE)**, and Dr. Ilya Tumkin **(SPbU)**.

Agreed:

Institute of Physics
The Czech Academy of Sciences
182 21 Prague 8, Na Slovance 2
Czech Republic
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13. 06. 2019

Dr. Michael Prouza
Director
Institute of Physics of the Czech Academy of Sciences, Czech Republic

Date

28. 05. 2019

Mr. Sergey V. Andryushin
Vice Rector for International Affairs
St. Petersburg State University

Date

Dr. Sergey V. Mikushev
Vice Rector for Research
St. Petersburg State University

Date