

Memorandum of Understanding

between

**Association
Lasers et Plasmas**

**Le Barp
France**

and

**Division for Power Industry,
Machine Building,
Mechanics and Control
Processes of the
Russian Academy of Sciences**

**Moscow
Russia**

Fédération de Recherche

Lasers et Plasmas

**Paris
France**

**International Science and
Technology Center**

**Moscow
Russia**

**Scientific collaboration in the domains related to the construction of
the PETAL plasma diagnostics and the facility utilization**

Definitions

This Memorandum of Understanding is concluded between the following organizations hereafter referred to as “**the Parties**”: the **Institute for Lasers and Plasmas**, represented by its legal body the **Association for Lasers and Plasmas**, - on one side and the **Division for Power Industry, Machine Building, Mechanics and Control Processes of the Russian Academy of Sciences**, and the **International Science and Technology Center**, in Moscow, on the other side.

The **Association for Lasers and Plasmas (ALP)** is the legal representative of the **Institute for Lasers and Plasmas (ILP)**. The ILP is a **Research Federation** of French laboratories that is endorsed by the **Centre National de la Recherche Scientifique**, the **Commissariat à l’Energie Atomique**, the **University of Bordeaux**, and the **Ecole Polytechnique**, and is dedicated for the national coordination of scientific works and utilization of high power, high energy lasers in France. The ILP acts as the Scientific Advisor to the **Aquitaine Regional Council**, which is the Acquisition Manager of the PETAL facility.

The **Division for Power Industry, Machine Building, Mechanics and Control Processes of the Russian Academy of Sciences (RAS)** is the government-funded research organization that provides a determined policy of welcoming Russian Institutions to set an integrated scientific program in the coupling of high energy and high power lasers.

The **International Science and Technology Center (ISTC)** is an intergovernmental organization that contributes to Fundamental Research, International Programs and Innovation providing weapons scientists from Russia and the Commonwealth of Independent States new opportunities in international partnership.

PETAL stands for PETawatt Aquitaine Laser. The PETAL laser facility is under construction in the Aquitaine region, France. This is a high energy laser system able to generate optical pulses of the energy up to 3.5 kJ within duration less than 1 ps. Its mission is to address the physics and technology issues related to the high field and high energy density science.

Purpose and Objectives for Cooperation

The **Parties** will collaborate in exploring the domains of science related to the high energy density and the matter in strong fields by using the **PETAL** laser facility for basic research and applications.

The collaboration shall mutually benefit both **Parties** in helping them to be more competitive at

the international level and to contribute more efficiently to the large scale European programs related to the high energy laser physics and technology such as HiPER (**High Power laser Energy Research facility**) and ELI (**Extreme Light Infrastructure**). This objective will be pursued through joint scientific programs and co-operation in development of equipments, especially specific diagnostics and use of experimental facilities.

Forms of Cooperation

The forms of cooperation between **the Parties** under the terms of this agreement may include the following:

1. Cooperative scientific projects dedicated to develop specific methods and equipments for diagnostics for the experiments on/with the **PETAL** facility through the academic agreements, as well as through the ISTC Science Project Program and the ISTC Partner Program.
2. Joint experiments using the **PETAL** facility.
3. Exchange of scientists, engineers and other specialists for participation in agreed research, development, analysis, design, and experimental activities conducted in research centers, laboratories, and other facilities and enterprises of the Parties or their contractors, according to their own access rules. Short-term visits by staff or assignments of staff to facilities of the Parties.
4. Organization of and participation in seminars, workshops, advanced training and other meetings.
5. Other forms of cooperation that both **Parties** have to agree mutually upon all other forms of cooperation in writing.

Coordination, Coming into Effect, Duration and Termination

1. This Memorandum of Understanding as a frame for collaboration will come into force upon the date of signature and will remain in force for five (5) years. This Memorandum will be renewed automatically for additional five (5) year periods unless either Party notifies the other in writing at least three months prior to the expiration date of its intention to permit this Memorandum to expire.


2. The Parties may amend this Memorandum in writing by mutually written agreement.
3. Joint activities and experiments which are not completed upon the expiration date or termination of this Memorandum may be continued until their completion under the terms of this Memorandum, provided the Parties have agreed upon in writing.

Le Barp, March 11, 2009

Association Laser and Plasmas

F. Hardouin

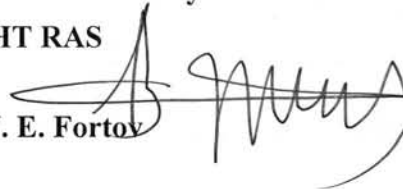

**Institute for Lasers and Plasmas
(Research Federation)**

P. Mora


**Division for Power Industry, Machine Building,
Mechanics and Control Processes of the
Russian Academy of Sciences**

**Institution of the
Russian Academy of Sciences
JIHT RAS**

V. E. Fortov



**International Science and Technology
Center**

Adriaan Van der Meer

