



INSTITUTE FOR CHEMICAL RESEARCH
KYOTO UNIVERSITY

Gokasho, Uji Kyoto 611-0011, Japan

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Dear Professor Mourou,

In this letter the Laboratory for Laser Matter Science in Institute for Chemical Research, Kyoto University (LLMS-LCR) would like to express our having the will to join the International Zetta-Exawatt Science and Technology Center IZEST, inaugurated in November 29th 2011, under the initiative of the ECOLE POLYTECHNIQUE and the COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES. We hope this letter will evolve to an MOU between ICR and IZEST in near future.

The LLMS-ICR fully encourages the IZEST mission that is:

1. to definite novel laser architectures and road map of the next generation of ultra high peak power/intensity and also the high average power lasers.
2. to facilitate the scientific and technical coordination among members of the international scientific community eager to discover new paradigms under pinned by extreme high intensity lasers. Particular attention will be devoted to:
 - prompt acceleration
 - high energy fundamental physics, physics beyond the Standard Model
 - vacuum structure
 - dark matter search
 - TeV Astrophysics and to the development of very high intensity lasers.
 - societal application like proton therapy, nuclear transmutation.

The LLMS in the Advanced Research Center for Beam Science in Institute Chemical Research, Kyoto University was funded to research the basic physics of laser-matter interactions with ultra-intense lasers and its applications, including intense radiation sources and ultra-fast electron diffraction for the diagnostics of ultrafast phenomena in matters.

The LLMS-ICR will be able to contribute to IZEST in the areas of:

- development of the sources of high energy radiations and particles,
- development of plasma optics such as plasma mirror, plasma compressor for high-intensity lasers,
- ultra-fast diagnostics for laser-plasma interactions.

The LLMS-ICR is expected to be an active member of the participant council formed by the heads of the IZEST supporting laboratories. By meeting twice a year the participating council will help to define IZEST strategy before it is submitted for approval by the steering committee composed of the Ecole Polytechnique and the CEA. The participant council provides also constant scientific and technical guidance to its management.

Sincerely yours,

Shuji Sakabe

Professor

Laboratory for Laser Matter Science

Advanced Research Center for Beam Science

Institute for Chemical Research

Kyoto University