



The University of Michigan  
College of Engineering  
Center for Ultrafast Optical Science

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Professor Karl Krushelnick  
Director

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Dear Professor Mourou,

By this letter we wish to express our enthusiasm to join the International Zetta-Exawatt center IZEST, which was created a year ago (Nov. 29, 2011) under the initiative of the ECOLE POLYTECHNIQUE and the COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES.

This letter of support will be replaced within six months by an MOU between CUOS and IZEST.

CUOS subscribes fully to the mission of IZEST, which is:

1. to define novel laser architectures as well as road maps for the development of the next generation of ultra high peak power and high average power laser systems.
2. to facilitate scientific and technical coordination among members of the international research community eager to discover new scientific paradigms underpinned by ultra-high intensity lasers. Particular attention will be devoted to:
  - prompt particle acceleration
  - high energy fundamental physics (physics beyond the Standard Model)
  - vacuum structure
  - dark matter searches
  - TeV Astrophysics
  - societal applications such as proton therapy and nuclear transmutation.

The Center for Ultrafast Optical Science (CUOS), established by the National Foundation (USA), is the oldest center in the field of Ultra High Field Science, and has been the site where many pioneering works have been demonstrated.

The CUOS contribution to IZEST will be in the areas of:

- novel sources of high energy radiation and particles,
- fiber-based high peak power and high average power lasers.
- the development of laser systems in the relativistic lambda cubed regime.

CUOS will actively seek State and National funding in the areas of interest to IZEST.

CUOS plans 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 the strategy of IZEST before it is submitted for approval by the

steering committee composed of the Ecole Polytechnique and the CEA. The participant council also provides constant scientific and technical guidance to its management.

Lastly, it is the intention of CUOS to participate at the first Participant Council meeting to be held at the next IZEST Conference on Laser-based High Energy Physics at the University of Strathclyde, in Glasgow, Scotland on Nov.12, 2012.

Sincerely  
Sincerely,



Karl Krushelnick  
Professor of Nuclear Engineering, Electrical Engineering and Computer Science and  
Physics