



September 8, 2011

Letter of interest for IZEST and its activities by KEK

Dear Professor Gerard Mourou,

It is our intention for KEK to support your effort of and participate in the joint research activities of promoting the highest intensity frontier of lasers and high field science associated with such lasers and in particular for laser plasma accelerators and in forming an international team and network of scientists under the International Center for Zettawatt-Exawatt Science and Technology (IZEST) and its reach of activities including the LIL and XCELS, as explained in your letter dated Sept. 1, 2011.

I am of opinion that revolutionary ideas are essential for future advanced ultra-high energy and ultra-high power accelerators. Such accelerators open up not only the new paradigms of fundamental physics, but also widespread application-fields. The laser-plasma accelerator is the most challenging and prospective area for future high energy accelerators. I seriously feel the requirement of technological advances will come from the current proof-of-principle one-shot laser-plasma acceleration to multi-shots with high repetition acceleration, that is, the laser-plasma accelerator of practical importance. Noting this, your IZEST to increase the laser power and capabilities much beyond the current level and form a team of international scientific talents is one of keys for achieving this goal.

But we need to forge the effort of the accelerator physics community and laser physics community in a positive collaborative framework. This is why I promoted as Chair of ICFA to closely collaborate with ICUIL. I am glad that the joint activities of ICFA-ICUIL are fostering the necessary research and environment. I am also aware that a lot more is necessary to meet the new challenges to realize laser accelerators. This is why I am so impressed with the activities of IZEST and whose goals to erect the exawatt lasers that can drive particle accelerators with energies of TeV and beyond and we at KEK would participate in this process.

We understand that IZEST will assist and promote the world-wide efforts, for example, that of French LIL Exawatt, that of Russian Mega Science laser project (XCELS), and possibly the deliberated Japanese Exawatt Laser among others. KEK is glad to closely collaborate in these research activities by bringing in its research capabilities and resources in trained personnel, accelerator and detector components, high energy physics expertise, and related technologies contributions as becoming necessary. By introducing the “Laser-based high energy and fundamental physics” paradigm, IZEST has the potential to redefine the contours of high energy physics. I admire the leading role that France with the Ecole Polytechnique and the Commissariat a l Energie Atomique is taking in this matter. At KEK we want to assure you that we will do our utmost to second you in this endeavor to reshape and reenergize high energy physics around the ultra high intensity laser. KEK will also collaborate with IZEST by assisting the world-wide initiatives.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'A. Suzuki', with a stylized flourish at the end.

Atsuto Suzuki
Director General of KEK
High Energy Accelerator Research Organization