

**Memorandum of Understanding concerning a collaborative research activity  
on the High Gradient Test of a C-band Accelerator Structure**

The High Energy Research Organization/KEK (hereinafter referred to as KEK), and the Istituto Nazionale di Fisica Nucleare/INFN (hereinafter referred to as INFN) hereby agree to open a collaborative research activity in the frame of the "COLLABORATION AGREEMENT BETWEEN THE HIGH ENERGY ACCELERATOR ORGANIZATION (KEK), JAPAN AND THE ISTITUTO NAZIONALE DI FISICA NUCLEARE (INFN), ITALY", bounded on 20 July 2007.

In recognition that:

- KEK is involved in technological research activity finalized to study, develop and test accelerating RF structures for particle accelerators;
- The INFN, in the framework of the research activity for the FEL-Accelerator SPARC, is interested in the energy up-grade of the accelerator SPARC;
- The INFN, through the R&D activity supported by the LNF, aims to develop C-band travelling wave accelerator structures to achieve the increase in energy of the accelerator SPARC;
- It is desire of both parties, with this Agreement, to deepen a successful cooperation and finalize a formal agreement on how to carry out the high power tests of a C-band accelerator structure prototype designed and manufactured by the INFN.

we agree that the following guidelines be employed to govern the interaction between KEK and INFN in our collaboration:

*Article 1. (Title and Scope of Collaborative Research)*

**KEK shall carry out, in collaboration with INFN, the following research activity:**

- (a) **Research title:**  
**High gradient test of a C-band accelerator structure supplied by INFN**
- (b) **Research objectives and content:**
  1. Establishment of the high power RF system
  2. High gradient test of accelerator structure
  3. Un-installation process and delivery of the structure back to LNF
- (c) **Expected research term:**  
from 2010 (year) 8 (month) 1 (day)  
through 2011 (year) 3 (month) 31 (day).

*Article 2.* INFN shall provide, for the research in Article 1, a lump contribution of 1.5 MJPY (onemillion-fivehundred-thousands JPY).

*Article 3.* Additional costs for travel and accommodation of the INFN personnel, participating to this research activity, will be at expenses of INFN.

*Article 4.* Equipment and materials acquired by KEK with the lump contribution referred to in article 2 shall remain the sole property of KEK.

- Article 5.* KEK is allowed to continue eventually the power test until the destruction of the structure, to verify the gradient limits of the prototype.
- Article 6.* Neither KEK nor INFN may cancel this collaborative research unilaterally.
- Article 7.* The intellectual properties resulting from the execution of this collaborative research shall belong to both KEK and INFN.
- Article 8.* Upon the completion of the collaborative research, KEK and INFN shall issue a report of the research results.
- Article 9.* KEK and INFN researchers may publish the progresses of the collaborative research. The timing and method of such publication shall be determined through consultation between KEK and INFN.
- Article 10.* The responsibility of the coordination concerning the organizational, scientific and technical matters related to the application of the present Memorandum of Understanding belongs to:  
 - for I.N.F.N.: Dr. Roberto Boni;  
 - for KEK.: Dr. Toshiyasu Higo;  
 or their successors that each Party may designate and communicate in writing to the other Party.
- Article 11.* This collaborative research agreement is subject to the provisions of the Agreement on "COLLABORATION AGREEMENT BETWEEN THE HIGH ENERGY ACCELERATOR ORGANIZATION (KEK), JAPAN AND THE ISTITUTO NAZIONALE DI FISICA NUCLEARE (INFN), ITALY". Where these do not stipulate, any issue concerning this collaborative research activity shall be settled through consultation between the parties.

This Memorandum concerning this research activity shall be drawn up in English language. One copy of each text shall be kept by each of the collaborating parties.

2010. \_\_\_\_\_. \_\_\_\_\_. \_\_\_\_\_.  
 (year) (month) (day)

Atsuto Suzuki  
 Director-General  
 KEK  
 Inter-University Research  
 Institute Corporation  
 High Energy Accelerator  
 Research Organization

Roberto Petronzio  
 President  
 INFN  
 Istituto Nazionale di Fisica Nucleare



*A. Suzuki*

23 LUG. 2010