

PROJECT ANNEX I
CONCERNING
THE RESEARCH OF RADIATION EFFECTS ON ELECTRONICS
under the
Agreement
between
The Department of Energy of the United States of America
and
The Japan Atomic Energy Agency
For Cooperation in Research and Development in Nuclear Science and Energy

The Department of Energy of the United States of America (DOE) and the Japan Atomic Energy Agency (JAEA) (hereinafter jointly referred to as the "Parties");

Wishing to continue cooperation concerning the research of radiation effects on electronics previously conducted under the Specific Memorandum of Agreement between the Department of Energy of the United States of America and the Japan Atomic Energy Research Institute Concerning the Research of Radiation Effects on Electronics of June 20, 2004; and

Acting pursuant to Article 4 of the Agreement between the Department of Energy of the United States of America and the Japan Atomic Energy Agency for Cooperation in Research and Development in Nuclear Science and Energy, signed on April 4, 2007 (hereinafter referred to as "R&D Agreement");

Hereby agree as follows:

ARTICLE 1 OBJECTIVE

The objective of this Project Annex is for the Parties to jointly foster the research of radiation effects on electronics (hereinafter referred to as the "Joint Project") using test facilities at JAEA and DOE's Sandia National Laboratory.

ARTICLE 2 TECHNICAL SCOPE

A. The Joint Project includes the following items:

- Single Ion Effects on Microelectronics and Modeling
 - (1) Design and fabrication of test samples for measuring transient currents induced in microelectronics by irradiation of single ions,
 - (2) Measurement of transient ion beam induced currents in the prepared samples using the ion micro beam,
 - (3) Theoretical modeling of the single event effects and comparison with experimental data.
- Development and Improvement of Evaluation Techniques for Single Ion Effects on Microelectronics
 - (1) Improvement of the evaluation technique for transient ion beam induced current using focused ion microbeams with energies of hundreds of MeV from the AVF Cyclotron.
 - (2) Development of an alternative evaluation technique, e.g., Ion Photon Emission Microscopy, with positional information for single ion effects on microelectronics using ion beams with hundreds of MeV from the AVF Cyclotron.

B. The Joint Project covers exchanges of information, personnel and equipment which are required for its implementation.

- C. Meetings and workshops shall be organized by the Parties to exchange information and discuss the implementation of the Joint Project.

ARTICLE 3 MANAGEMENT

- A. A Joint Working Group (hereinafter referred to as the “JWG”), composed of an equal number of representatives of each Party, shall be established for the detailed management of the Joint Project, including technical progress reviews and discussions of future activities of the cooperation under this Project Annex.
- B. Each Principal Coordinator, as defined in Article 5.2 of the R&D Agreement, shall designate one project leader, who shall be responsible for working contacts between the Parties.
- C. The JWG shall develop its own procedures to fulfill its functions as agreed by the Permanent Coordinating Group (PCG) as defined in Article 5.1 of the R&D Agreement.
- D. As appropriate, the Parties may invite representatives of relevant government agencies, research centers and other institutions in their respective countries to participate in the JWG meetings and other events conducted by the Parties under this Project Annex.

ARTICLE 4 FINANCE

Financial arrangements under this Project Annex shall be in accordance with Article 11.1 and 11.2 of the R&D Agreement.

ARTICLE 5
EXCHANGE OF PERSONNEL

Each Party may assign its staff to the other Party. Such exchange of personnel shall be in accordance with Article 6 of the R&D Agreement.

ARTICLE 6
EXCHANGE OF EQUIPMENT

The Parties may exchange equipment needed for the Joint Project. Such exchange of equipment shall be in accordance with Article 7 of the R&D Agreement.

ARTICLE 7
INFORMATION USE AND DISCLOSURE

Information use and disclosure under this Project Annex shall be in accordance with Articles 8, 9 and 11.5 of the R&D Agreement.

ARTICLE 8
INTELLECTUAL PROPERTY RIGHTS

The treatment of intellectual property rights under this Project Annex shall be in accordance with the provisions of Article 10 of the R&D Agreement.

ARTICLE 9
GENERAL PROVISIONS


This Project Annex is subject to and governed by the R&D Agreement.

ARTICLE 10
DURATION, AMENDMENT AND TERMINATION

- A. This Project Annex shall enter into force upon signature, with effect from June 20, 2008, shall continue for a five (5) year period, unless earlier terminated by one of the Parties, and may be extended or amended by written agreement of the Parties, provided that the R&D Agreement remains in force.
- B. This Project Annex may be terminated at any time at the discretion of either Party, upon sixty (60) days advance notification in writing by the Party seeking to terminate this Project Annex.

Signed in duplicate.

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:


Date: 2/23/09
Place: Washington D.C.

FOR THE JAPAN ATOMIC ENERGY
AGENCY:


Date: 3/23/09
Place: Tokyo