

**JSPS Core-to-Core Program**  
**FY2010 Implementation Plan (Project No. : 18002)**

Research Theme International Research Network for Exotic Femto Systems

Duration of Project 2008/4/1 - 2011/3/31 ( 36 months)

Core Institution in Japan (Co-Chair) School of Science, The University of Tokyo  
( Takaharu Otsuka )

**Implementing Organizations**

○ **Japan**

Japan	Core Institution	School of Science, The University of Tokyo	
	Co-Chair (name and title)	Takaharu Otsuka, Professor	
	Cooperating Institutions	RIKEN, Tokyo Institute of Technology, National Astronomical Observatory of Japan	Number of Cooperating Institutions  3

○ **Partner Countries**

USA	Core Institution	Oak Ridge National Laboratory	
	Co-Chair (name and title)	Witold Nazarewicz, Scientific Director of HRIBF	
	Cooperating Institutions	Michigan State Univ. Argonne National Lab., Yale Univ., Lawrence Berkeley National Lab., Univ. Notre Dame, Iowa State Univ. , Univ. Washington	Number of Cooperating Institutions  7

Germany	Core Institution	Gesellschaft fuer Schwerionenforschung	
	Co-Chair (name and title)	Karlheinz Langanke, Director of Theory Department	
	Cooperating Institutions	Tech. Univ. Darmstadt, Univ. Koeln, Tech. Univ. Muenchen, Univ. Frankfurt	Number of Cooperating Institutions  4

France	Core Institution	Grand Accelérateur National d'Ions Lourds	
	Co-Chair (name and title)	Sydney Gales, Director	
	Cooperating Institutions	IRES Strasbourg, CENBG Bordeaux, CEA Bruyeres-le-Chatel, IPN-Orsay, CEN Saclay	Number of Cooperating Institutions  5

Finland	Core Institution	University of Jyväskylä	
	Co-Chair (name and title)	Juha Aysto, Professor	
	Cooperating Institutions		Number of Cooperating Institutions  0

Italy	Core Institution	University of Padova	
	Co-Chair (name and title)	Cosimo Signorini, Professor	
	Cooperating Institutions	INFN, University of Catania, Laboratori Nazionali di Legnaro	Number of Cooperating Institutions  3

Norway	Core Institution	University of Oslo	
	Co-Chair (name and title)	Morten Hjorth-Jensen, Professor	
	Cooperating Institutions		Number of Cooperating Institutions  0

## Objectives of Research Exchange (including the five years after the project finishes)

The aim of International Research Network on Exotic Femto Systems (EFES) is to construct the network for the nuclear scientists in Japan, USA, Germany, France, Italy, Finland and Norway, and to promote their collaborations. These countries are leading countries of the science based on the radioactive ion beams (both in theory and experiment), and the scientific goal is to understand the nature of exotic nuclei, which do not exist on earth. How the elements are synthesized, especially in which condition heavy nuclei such as Au and U are produced is one of the biggest issues to be answered. The education of younger generation of this field is another major aim.

## Results to the present

The program is going on quite well. We have carried out four types of activities: initiating the collaboration projects, organizing seminars with partner countries, sending researchers abroad, and sending/inviting young scientists to the summer schools. Many experimentalists and theoreticians have been sent abroad for collaborative works, and we have organized many workshops. Also, young scientists have been sent to partner countries for educational purpose and starting collaborations. Japanese graduate students were sent to the summer schools in Germany and USA, and we have invited students to CNS-EFES summer school from the partner countries.

## Summary of FY 2010 Exchange Plan

### **Joint Research**

We carry out two theoretical joint researches with the University of Oslo (Norway) and Iowa State University (USA). We fulfill four experimental joint researches for the developments of new techniques with the partner countries (France, USA, and Finland).

### **Seminar**

We will organize eight joint seminars with partner countries. The first one with Germany has been held in June. The US matching fund will organize a joint workshop in Japan, while there will be other joint workshops with France, Germany, Italy, Norway, and USA.

### **Researcher Exchanges**

To promote the collaboration, many scientists in Japan will be sent to the partner countries. Graduate students will be sent to summer schools in USA and Germany. The students of the partner countries will be invited to CNS-EFES summer school in Japan.