

Project No.:18004 Core Institution in Japan:Graduate School of Engineering, Kyoto University
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**JSPS Core-to-Core Program -Strategic Research Networks-
FY2008 Research Report**

Project No.	18004
Research Theme	Advanced Particle Handling Science
Duration of Project	2008/4/1 – 2011/3/31 (36 months)
Core Institution in Japan	Kyoto University

Implementing Organizations

Country	Japan
Core Institution	Graduate School of Engineering, Kyoto University
Co-Chair (name and title)	Ko Higashitani, Specially Assigned Professor
Number of Cooperating Institutions	6
Cooperating Institutions	Graduate School of Pharmaceutical Sciences, Kyoto University Institute for Frontier Medical Science, Kyoto University Doshisha University Okayama University University of Hyogo Kobe Gakuin University

Country	United States of America
Core Institution	Particle Engineering Research Center, University of Florida
Co-Chair (name and title)	Brij Moudgil, Director, Professor
Number of Cooperating Institutions	0
Cooperating Institutions	
Matching Fund	The Mission activities of the Center including Research(& research collaboration), Education and Technology

Country	United Kingdom
Core Institution	Institute of Particle Science and Engineering, University of Leeds
Co-Chair (name and title)	Simon Biggs, Head of the institute, Professor
Number of Cooperating Institutions	0
Cooperating Institutions	
Matching Fund	EPSRC/EU/British Council & University of Leeds

Country	Australia
Core Institution	Particulate Fluids Processing Centre, The University of Melbourne
Co-Chair (name and title)	Geoff Stevens, Director, Professor
Number of Cooperating Institutions	0
Cooperating Institutions	
Matching Fund	Australian Mineral Science Research Fund

Country	Germany
Core Institution	Institute of Particle Technology, The Friedrich-Alexander-University of Erlangen-Nuremberg
Co-Chair (name and title)	Wolfgang Peukert, Head of the institute, Professor
Number of Cooperating Institutions	1
Cooperating Institutions	Max Planck Institute (Mainz)
Matching Fund	Cluster of Excellence

Country	Switzerland
Core Institution	Particle Technology Laboratory Swiss Federal Institute of Technology, Zurich
Co-Chair (name and title)	Sotiris E. Pratsinis, Director, Professor
Number of Cooperating Institutions	0
Cooperating Institutions	
Matching Fund	Exploratory Research on Advanced Materials and Processes

Result of Program Implementation

In FY2008, 7 research collaborations, 10 seminars, and the 8 researcher exchanges were carried out. The collaboration projects were carried out in such a way that the Japanese researchers visited their collaborating institutes, exchanged their scientific ideas and performed the experiments with the collaborators to obtain fruitful results. 12 researchers of not only the partner institutions but also the other institutions abroad in total visited Kyoto University and cooperating institutions. 10 seminars were held with those visiting researchers, in which about 400 researchers and students in total participated to exchange the up-to-date information. One seminar "Young Researchers Meeting" was held in the University of Erlangen and Max Planck Institute(Mainz) in Germany. We sent 68 people to the six partner institutions (6 to University of Florida, 7 to University of Leeds, 6 to The University of Melbourne,17 to University of Erlangen, 18 to Max Planck Institute and 8 to ETH in Switzerland), and established strong networks between individuals via the scientific meetings held at the partner institutions.

It is worth noting that young Japanese researchers used this program very actively and effectively to make their own strong international networks and collaborations, which will result in the leading networks and collaborations of the next generation in the field of particle science and technology.

Achievements in FY2008 (Self Review)

The following achievements were made this year through the activities described above. (1) The center for this program "Advanced Particle Handling Science" was established as a division of research project on Frontiers of Particle Science and Technology in Advanced Engineering Research Center, Graduate School of Engineering, Kyoto University. (2) The basic and strong networks for "Advanced Particle Handling Science" between Kyoto University, Japanese cooperating institutions and five foreign partner universities and a research institute were established. (3) A huge amount of information on Advanced Particle Handling Science was accumulated among Japanese researchers. (4) Seven collaboration researches were successfully carried out between Japanese researchers and participants. (5) Tight networks between young researchers of next generation were formed through the 25th seminar, "Young Researchers' Meeting 2008", which was held in the University of Erlangen and Max Planck Institute (Mainz) in Germany. (6) Especially young researchers were well trained about how to negotiate and discuss with researchers of different culture.

(7) Individual intimate connections between researchers were strengthened. (8) A collaboration work between Japanese and Australian researchers were so successful that their proposal was accepted as a NEDO international collaboration research of young researchers.

Future Plan

The strong research network and mutual confidence between 6 institutes in 5 countries were established through the "face-to-face" contacts between researchers for last three years. Hence most of our members now know the content of researchers in partner institutes, and also noticed the importance of the collaboration works which might bring "a great break-through" of various problems. Hence this is the time to promote strongly the collaboration works among the members not only internationally but also domestically. We also noticed the importance to educate the students who will be the professional researchers in the field of advanced particle handling science for the further development of this field. Hence we are planning to have some kind of educational program of students under the international atmosphere.