

# ☺☺☺ 談話室 ☺☺☺

' f-electron Many Body Physics ' Group Advanced Science Research Center, JAEA

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It is a pleasure to discuss my experiences during the past 15 months that I have worked at the Advanced Science Research Center (ASRC). Prior to coming here from Los Alamos National Laboratory in the U.S., I was interviewed by several officers of JAERI (now JAEA). One question stands out from those interviews: "Why do you want to live and work in Japan, a country with very different culture and language from the United States?" My answer was immediate: "It will be a great adventure!" I can now say that this has come true; it has been, and continues to be, a great adventure!

I am very pleased by the high quality of the research staff and facilities in the ASRC. My area of expertise involves the study of the electronic properties of rare-earth and actinide compounds, materials containing atoms like Ce and Pu, for example. Here in the ASRC we have world-class capabilities to make new materials, but also to characterize them with a variety of techniques, including nuclear magnetic resonance, neutron scattering and muon spin relaxation ( $\mu$ SR). My technique is  $\mu$ SR. Our outstanding theory group also helps us to understand the broad implications of our experimental results. The condensed matter ' f-electron ' Group in the ASRC is recognized world-wide for its important impact on this field.

I was initially attracted here by the new J-PARC muon facility currently under construction. This facility can advance muon physics worldwide because of the very high anticipated muon flux, about two orders of magnitude greater than available elsewhere. Thanks to the generous and far-sighted contributions from the management of the ASRC, JAEA is now working with KEK to

make this premier muon facility a reality.

From a personal perspective, I have learned much about living and working in a different environment, though I have just 'scratched the surface' of the deep and powerful Japanese culture. I now have a better appreciation of the importance of culture for each of us, and how it provides guidelines and values for our daily lives. This is something that we hardly notice until we find ourselves in a new and very different environment.

I want to thank my many Japanese friends and colleagues in the ASRC who have helped me with language, bureaucratic and personal issues, and have also made adjustments themselves to accommodate having a new person from another country working with them. In particular, I would like to acknowledge Drs. Y. Haga, T. Hotta, W. Higemoto, S. Kambe, N. Metoki, A. Nakamura, K. Ohishi, and Y. Tokunaga, as well as our student T. Ito and our excellent secretary, A. Narita. I also want to express my gratitude to Prof. H. Yasuoka, the previous ASRC Director, who made this adventure possible for me, and to our current Director, Prof. Y. Hatano, who is providing much support and encouragement.

Finally, I want to say how much my wife Paula is also enjoying her stay in Japan. She teaches English at a school in Tokai-Mura, takes a regular 'shuujii' class, and, of course, studies the Japanese language. She has also made several very good Japanese lady friends. Both my wife and I have met people here in Japan whose friendship we will continue to enjoy long after our stay here has been completed. For this we are very grateful.

# The 6th International Symposium on Advanced Science Research (ASR2006)

## Frontiers of Nuclear and Radiochemistry

Japan Atomic Energy Agency(JAEA)-Tokai,Japan

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### Plenary session

**D. C. Hoffman**, LBNL, Berkeley, Exploring the frontiers of nuclear and radiochemistry

### Session A: Superheavy elements – production, and chemical and nuclear properties

**Yu. Oganessian**, JINR, Dubna, Study of the reactions of synthesis and properties of heavy nuclei at Dubna

**M. Schäel**, GSI, Darmstadt, Superheavy element chemistry - Achievements and perspectives

**H. Nitsche**, LBNL, Berkeley, Beyond zepto science: Chemistry and physics of the heaviest elements at Berkeley

**K. Morita**, RIKEN, Wako, Search for the heaviest elements at RIKEN

**Z. Qin**, IMP, Lanzhou, Nuclear chemistry of the heaviest elements at IMP

**K. Tsukada**, JAEA, Tokai, Chemical studies of the transactinide elements at JAEA

**M. Asai**, JAEA, Tokai, g-ray spectroscopy of the heaviest elements at JAEA

### Session B: Nuclear processes as chemical probes

**G. Langouche**, Univ. Leuven, Leuven, Nuclear probes for ultrathin silicide layer strain analysis and for semiconductor lattice location studies

**Y. Ohkubo**, KUR, Osaka, TDPAC and its application to chemistry

**T. Ohtsuki**, Tohoku Univ., Sendai, Radioactive decay of  $^7\text{Be}$  speed up by placing inside C60 cages

### Session C: Application of nuclear and radiochemical techniques

**H. Sakurai**, Kyoto Pharma. Univ., Kyoto, Studies on the usefulness of radio-isotopes in pharmaceutical sciences

**Y. L. Zhao**, IHEP, Beijing, Nuclear techniques in the study of nanotechnology and nanosafety

**Z. F. Chai**, IHEP, Beijing, Modern nuclear analytical techniques and their innovative applications in nanotechnology, biology, information technology and cognitive science

**H. Hidaka**, Hiroshima Univ., Hiroshima, Geochemical characteristics of an ancient nuclear reactor "Oklo"

**J. V. Kratz**, Univ. Mainz, Mainz, Ultra trace analysis of long-lived radionuclides by laser mass spectroscopy

**Y. Nagashima**, Tsukuba Univ., Tsukuba, Reassessment of the A-bomb radiation dosimetry by the  $^{36}\text{Cl}$  accelerator mass spectrometry

### Session D: Environmental radiochemistry and actinide sciences

**S. B. Clark**, Washington State Univ., Distributions and sources of plutonium and other actinides in the US ecosystem

**N. Momoshima**, Kyushu Univ., Fukuoka, Tritium in the atmospheric environment

**Y. Muramatsu**, Gakushuin Univ., Tokyo, Radioecology of iodine

**A. J. Francis**, BNL, Upton, Microbial transformations of plutonium

Advanced Science Research Center, JAEA, <http://asrc.tokai-sc.jaea.go.jp/ASR2006/index.html>