

Chapter 4 Domestic Collaborations

1. Research under Collaboration Programs

(1) International Research Center for Nuclear Materials Science

No	Institution	Leader	Title
M37-1	IMR, Tohoku Univ.	Y. Nagai	Radiation effects of RPVS and its model alloys using positron annihilation and 3DAP
M37-2	U. Tokyo	K. Nagao	Age determination of meteorites and terrestrial minerals using ^{40}Ar - ^{39}Ar and I-Xe method after neutron irradiation
M37-3	IMR, Tohoku Univ.	H. Kurishita	Development of nano-structured stainless steel with superior anti-radiation damage performance
M37-4	Yanagata Univ.	K. Saito	Age determination of rocks and minerals by the ^{40}Ar - ^{39}Ar method
M37-5	Kyushu Univ.	E. Kuramoto	Effects of electron and neutron irradiations in Fe-Cu alloys
M37-6	Okayama Univ.	T. Yoshio	Anti-radiation damage performance of refractory high-Z alloys with recrystallization-microstructural control by multi-step internal nitriding-carbiding method
M37-7	IMR, Tohoku Univ.	M. Hasegawa	Study on radiation induced defects in silicon and glass by positron annihilation, electron spin resonance and optical absorption methods
M37-8	NIFS	T. Muroga	Radiation effects on fusion reactor liquid blanket structure components
M37-9	JAERI	T. Tsukada	Study on nano-structural changes of BWR shroud materials using 3-dimensional atom probe (3DAP) method
M37-10	Kyushu Univ.	S. Matsumura	Microstructures in insulating ceramics irradiated with neutrons under electric field
M37-11	Ibaraki Univ.	A. Kurumada	Effects of radiation damage on microstructures and properties of high temperature gas reactors
M37-12	Kyoto Univ.	T. Yoshiie	Mechanism of radiation damage evolution and possibility of damage restoration by variable temperature irradiation of RPVS and its model alloys
M37-13	IMR, Tohoku Univ.	N. Nitta	Mechanism of radiation hardening and radiation embrittlement in RPVS
M37-14	IMR, Tohoku Univ.	K. Fukumoto	Environmental effects on thermal creep of V-4Cr-4Ti alloys in Na capsule
M37-15	IMR, Tohoku Univ.	K. Fukumoto	Identification of CRP (copper rich precipitates) in RPVS by AFM method

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M37-16	IMR, Tohoku Univ.	Y. Satoh	Neutron irradiation damage in vanadium alloys: Correlation between evolution of damaged microstructures and alterations of mechanical properties
M37-17	JAERI	H. Nishiyama	Radiation embrittlement associated with low contents of Cu and P in RPVS
M37-18	Kyoto Univ.	A. Kohyama	Neutron irradiation effects in SiC/SiC composites and SiC for fusion applications
M37-19	Kyoto Univ.	A. Kohyama	Neutron irradiation effects in steels for reactor plant applications
M37-20	Hokkaido Univ.	T. Shibayama	Radiation effects in Be ₁₂ Ti as an advanced neutron multiplying material for fusion solid blanket structures
M37-21	IMR, Tohoku Univ.	A. Kawashima	Development of ductile and corrosion resistant Cr alloys and their radiation effects
M37-22	Iwate Univ.	M. Takahashi	Correlation between nano-structural changes and magnetization by irradiation in A533B steel
M37-23	IMR, Tohoku Univ.	H. Kurishita	Development of radiation-resistant, ductile refractory metals by microstructural control
M37-24	Kinki Univ.	H. Atsumi	Neutron irradiation effects on hydrogen diffusion in carbon materials for fusion applications
M37-25	Kyushu Univ.	N. Yoshida	Effects of contaminant impurity elements from irradiation environments in V-4Cr-4Ti alloys
M37-26	Kyushu Univ.	H. Watanabe	Point defect accumulation in fusion reactor structural materials under variable temperature irradiation
M37-27	Kyoto Univ.	A. Kimura	Material irradiation studies for efficient and safe usage of atomic energy - Effects of Mn on radiation hardening of A533B model alloys -
M37-28	Kyoto Univ.	A. Kimura	Mechanism in superior anti-radiation damage of reduced activation ODS steels for fusion applications
M37-29	IMR, Tohoku Univ.	K. Fuji	Materials property studies on optical sensing techniques under heavy neutron irradiation
M37-30	IMR, Tohoku Univ.	B. Tsuchiya	Dynamic radiation effects in proton-conductive oxides
M37-31	Himeji Inst. Tech.	T. Yamasaki	Anti-radiation damage behavior of nano-crystalline materials prepared by electrolytic precipitation methods
M37-32	IMR, Tohoku Univ.	K. Konashi	Development of hydride neutron-absorbers
M37-33	Ehime Univ.	K. Nakai	Neutron irradiation effects on microstructural evolution in refractory metals with fine grains and fine dispersoid

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M37-34	Ehime Univ.	K. Nakai	Changes in microstructures and mechanical properties by neutron irradiation in vanadium alloys with fine grains and fine dispersoid
M37-35	Tohoku Univ.	A. Hasegawa	Effects of neutron irradiation and implanted He and H on elastic constants of SiC
M37-36	Tohoku Univ.	K. Abe	Influence of solid transmuted elements on radiation effects in refractory metals and alloys for fusion applications
M37-37	IMR, Tohoku Univ.	M. Narui	Effects of interstitial impurity elements on neutron radiation embrittlement in Fe model alloys
M37-38	Tohoku Univ.	M. Satou	Neutron irradiation effects and alloy development with interstitial impurity control in vanadium alloys

No	Institution	Leader	Title
F37-1	Tokyo Institute of Technology	Y. Fujii	Mutual separation of actinoids and lanthanoids by means of chromatography with solid extractants
F37-2	Hokkaido Univ.	M. Sato	Adsorption behavior of actinides onto some minerals
F37-3	Tohoku Univ.	O. Tochiyama	The determination of the standard formation enthalpy of actinide complexes
F37-4	Tokai Univ.	S. Yoshida	The investigation for the quantitative determination and the gamma-ray emission rate from Ra-226
F37-5	Riken	S. Enomoto	The pumping of the nuclear isomer of Th-229
F37-6	IMR, Tohoku Univ.	T. Li	Spin frustration in ternary neptunium and uranium compounds
F37-7	IMR, Tohoku Univ.	M. Hara	Preparation of actinide metals
F37-8	IMR, Tohoku Univ.	M. Hara	Recovery of actinides from radioactive ashes
F37-9	Musasahi Inst. Tech.	S. Hirai	Determination of alpha-emitters in natural water and iron base materials
F37-10	IMR, Tohoku Univ.	Y. Shiokawa	Material corrosion in active liquid metals such as uranium
F37-11	IMR, Tohoku Univ.	Y. Shiokawa	Fundamental solid state physics study of neptunium compounds

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F37-12	Tohoku Univ.	T. Sekine	Formation and the growth of technetium colloids
F37-13	IMR, Tohoku Univ.	D. Aoki	Growing good single crystals of trans-uranium compounds centered at neptunium and study of their Fermi surface by means of de Haas van Alfven effect
F37-14	IMR, Tohoku Univ.	I. Sato	Aqueous chemistry of actinoid and lanthanoid
F37-15	Kyoto Univ.	K. Takamiya	Preparation of actinide target for the investigation of super-heavy elements
F37-16	IMR, Tohoku Univ.	T. Mitsugashira	Investigation of the production and the decay property of Th-229m
F37-17	IMR, Tohoku Univ.	T. Mitsugashira	Radioactive dis-equilibrium of natural alpha decay series in some modern materials
F37-18	JAERI	S. Kobe	Solid state physics of neptunium compounds
F37-19	IMR, Tohoku Univ.	T. Yamamura	Development of uranium battery with high efficiency
F37-20	Hokkaido Univ.	H. Amizuka	Anomalous magnetism of uranium compounds with strongly correlating electron system
F37-21	Okayama Univ.	Y. Inada	Growing of good single crystals of uranium compounds and their solid state physics
F37-22	Kyushu Univ.	K. Idemitsu	Migration of actinides in the buffer materials for the high level waste disposal
F37-23	Nagoya Univ.	N. Sato	Correlation of magnetism and superconductivity in uranium-based magnetic superconductor compounds
F37-24	Kanazawa Univ.	T. Nakanishi	Production of Sm-146 and the determination of its half-life
F37-25	Kanazawa Univ.	Y. Washiyama	Application of alpha-decay series nuclides to nuclear medicine
F37-26	JNC	T. Namekawa	Incineration behavior of americium in some target fuels
F37-27	IMR, Tohoku Univ.	Y. Homma	
F37-28	Gunma Univ.	M. Ito	Magnetism of actinoid compounds by magnetic diffraction using SOR X-ray

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F37-29	IMR, Tohoku Univ.	K. Konashi	Post irradiation tests of hydride fuel clad tube