Recruitment for Postdoctoral Fellow
(Fixed-term researcher)

1. Available positions

Scientist about 25 persons
(The number might be changed without notice.)

2. Recruitment field

-Computational science
-Advanced science research
-Nuclear science and engineering
-Nuclear safety research
-Quantum beam science
-Fusion research and development
-Advanced nuclear system research and development
-Geological isolation research and development
-Other related research fields

For more information, see “Recruitment Field for Postdoctoral Fellow of JAEA [PDF]”.

3. Qualification requirements

(1) Having a PhD degree related to recruitment field (at the time of assignment)
(2) Having a PhD obtained after April 1, 2006

4. Starting date of employment

April 1, 2014 (in principle)

5. Terms of employment

(1) Salary
420,000 yen/month (as of April 1, 2013) including social insurance and tax
(2) Allowance
Commutation allowance, Housing allowance, etc.
(3) Holidays
Weekend (Saturday and Sunday), National holidays, Year-end and new-year holidays, Paid holidays

6. Contract

Period of employment is from April 1 2014 to March 31 2015 (in principle).

Employment contract can be extended up to a total duration of three years, depending upon the annual review of your research progress.

* If you are a fixed-term employee of JAEA at present, the extension of employment contract will be limited to five years in total from the original recruitment.

Should you achieve outstanding results during your fixed-term employment, you could be offered a position as permanent staff.

7. Necessary documents and application procedures

(1) Application form (Form 1-1, Form 1-2, Form2-1, Form2-2, Form3, Form4)
Download from here: [PDF], [WORD]

(2) Certificate of graduation, certificate of completion of courses (for bachelor, master and PhD respectively)

(3) Transcripts (for bachelor, master and PhD respectively)

(4) Certificate of PhD (who has a PhD)
or Certification for expected completion of PhD course (who is in PhD course)

※Copies are not acceptable.

※Incomplete applications may not be accepted.

8. Address for submission of application

Human Resources Strategy Office
Personnel Department
Japan Atomic Energy Agency
4-49, Muramatsu, Tokai-mura Naka-gun, Ibaraki-ken 319-1184 Japan
(Mark in red “Application documents for Postdoctoral Fellow” on the envelope.)

9. Deadline for submission of application

Properly completed forms and all the necessary documents mentioned above must be received no later than July 31, 2013.

10. Document examination

Applicants will be screened by the document examination. The result of the document examination will be notified to the applicants in writing.
Note that application documents will not be returned.

11. Recruitment examination

(1) Examination of research achievements (oral presentation using PowerPoint file or OHP and Q&A)

(2) Oral examination / interview

12. Result of recruitment examination

The result of recruitment examination will be notified to the applicants in writing by the end of October.

13. Travel expenses

We will refund your travel expenses for the recruitment examination according to the JAEA's administrative rules.

We can only bear the actual travel cost in Japan.

Detailed information will be provided to the candidates.

14. Points to note

(1) Applicants who pass the document examination are supposed to submit medical certificate taken within 6 months (including height, weight, eyesight, urinalysis, chest X-ray).

(2) Candidates without Japanese Nationality are required to obtain a necessary visa status to work in Japan by the date of adoption.

15. Contact persons

Mr. Jin Kawahara
Human Resources Strategy Office
Personnel Department
Japan Atomic Energy Agency
4-49, Muramatsu, Tokai-mura Naka-gun, Ibaraki-ken 319-1184 Japan
Tel: +81-29-282-1122
Fax: +81-29-283-4701
E-mail: jinji-saiyo14@jaea.go.jp

16. Dealing with personal information

We will use personal information only for the screening process. It will also be used for employment management for those employed. The information of the rejected applicants will be disposed a year after the submission.

Recruitment Field for Postdoctoral Fellow of JAEA

№	Department	Theme	Location	The person in charge	Section	Tel	E-mail	Summary	Radiation Worker/ Non-Radiation Worker
1	Center for Computational Science and e-Systems	Research and development work of simulation technique in the field of seismic engineering	Kashiwa	Akemi Nishida	Computer Science Research and Development Office	81-4-7135-2368	nishida.akemi@jaea.go.jp	The safety of nuclear power plants will be studied, in the light of advanced computational science, by considering the following issues ・efficient algorithm of a large scale structural analysis or vibration analysis for an entire nuclear facility, ・efficient and effective analysis technique of a large volume of data generated from the simulator, and ・reliability enhancement of seismic risk assessment of a nuclear facility.	Non-Radiation Worker
2	Department of Science and Technology for Nuclear Material Management	Nonprolifation policy research on formulation of nuclear energy policy	Nuclear Science Research Institute (Tokai)	Kazunori Suda	Policy Research Office	81-29-284-3490	suda.kazunori@jaea.go.jp	After the TEPCO's Fukushima Daiichi-NPP accident, nuclear energy policy, especially back-end of nuclear fuel cycle, has been under discussion in Japan. Based on such discussion, the following research will be made. ・To survey and analyze back-end policy of other states and application examination of safeguards for direct disposal of spent nuclear fuel which IAEA had studied. ・To analyze issues from the point of view of improving nuclear non-proliferation and security on plutonium utilization. In addition, Postdoctoral Fellow is expected to research and analyze the recent international developments on the peaceful use of nuclear energy and nuclear non-proliferation.	Non-Radiation Worker
3	Department of Science and Technology for Nuclear Material Management	Study on nuclear proliferation resistance and impact on nuclear fuel cycle facilities	Nuclear Science Research Institute (Tokai)	Masaru Watahiki	Technology Development Office	81-29-284-3456	watahiki.masaru@jaea.go.jp	In recent years, global concerns about nuclear proliferation including the concerns from the viewpoint of nuclear security have been increased. As the countermeasure to these concerns, the research on improvement of nuclear proliferation resistance through such measures as makes nuclear material more difficult to handle with high radiation and heat has been carried out. In this study, the effectiveness of the decrease of material attractiveness is evaluated from nuclear proliference resistance viewpoint for whole fuel cycle including initial fuel, fast reactor, reprocessing, fuel fabrication by using simulation and modeling. Furthermore, the various approaches for redeucing material attractiveness are assessed in terms of the impact on the fuel cycle operations.	Non-Radiation Worker
4	Nuclear Safety Research Center	Experimental research of thermal-hydraulic phenomena regarding LWR safety	Nuclear Science Research Institute (Tokai)	Akira Satou	Thermohydraulic Safety Research Group	81-29-282-5273	satou.akira@jaea.go.jp	Thermal-hydraulic experiment for investigating behavior of core cooling and coolant flow under LWR accident, and relevant development of mesurement techniques.	Non-Radiation Worker
5	Nuclear Safety Research Center	Internal exposure dose assessment in nuclear facility accidents	Nuclear Science Research Institute (Tokai)	Kazumasa Shimada	Radiation Risk Analysis Research Group	81-29-284-3758	shimada.kazumasa@jaea.go.jp	As a part of developments of public dose assessment methods in Nuclear Power Plant accidents, reliable dose assessment methods will be developed by using biological models and radiation transport calculation codes. The effects of dose reduction in the thyroid gland will be also discussed on the conditions for timing and dosage of administrated stable iodine tablets based on analyses of pharmacokinetic models.	Non-Radiation Worker
6	Nuclear Safety Research Center	Computer simulations of the microstructureformation of the stainless steels for nuclear powerplants based on the phase field modeling	Nuclear Science Research Institute (Tokai) or Tsuruga	Teruyoshi Abe	Aging & Maintenance TechnologyResearch Group	81-770-23-3024	abe.teruyoshi@jaea.go.jp	As for a series of long-term reliability research projects for light water reactor using Fugen served materials, it has been commenced toclarify the low-temperature embrittlement mechanism using computer simulations on the microstructure formation such as solidification andSpinodal decomposition of the casted stainless steels based on the phase field modeling. Phase field modeling, the most widely spreadingsimulation technologies covering from nano scale to mesoscopic scale at present, will be extended to simulate the microstructure formationof HAZ of the stainless steels and the irradiated structure of the low-alloy steels for the mechanism clarification of IGSCC and irradiationembrittlement of the reactor pressure vessel successively.	Non-Radiation Worker
7	Advanced Science Research Center	Chemical and nuclear study of superheavy elements	Nuclear Science Research Institute (Tokai)	Kazuaki Tsukada	Research Group for Superheavy Elements	81-29-282-5491	tsukada.kazuaki@jaea.go.jp	The main objective is to understand chemical and nuclear properties of superheavy elements (SHEs) placed at the uppermost end of the Periodic Table as well as on the heaviest frontier of the nuclear chart. This thema will focus on the valence electronic structure of SHEs that is experimentally evaluated from their ionization potentials, spin angular momentum, redox potentials, ionic radii, and compound formations. And to elucidate the limits of stability of superheavy nuclei (SHN), the shell structure of SHN is also investigated through nuclear spectroscopy.	Radiation Worker
8	Advanced Science Research Center	Experimental study of synthesis and electronic states of correlated 5f electron systems	Nuclear Science Research Institute (Tokai)	Yoshinori Haga	Research Group for Actinide Materials Science	81-29-282-6735	haga.yoshinori@jaea.go.jp	In this study, various aspects of strongly correlated 5f electrons in actinide compounds are investigated experimentally. Research methods involve synthesis of new materials, high-quality single crystal growth and physical property measurements under extreme conditions.	Radiation Worker
9	Advanced Science Research Center	Theoretical Study on Strongly Correlated Electron Systems by Large Scale Numerical Calculations	Nuclear Science Research Institute (Tokai)	Michiyasu Mori	Research Group for Condensed Matter Theory	81-29-284-3508	mori.michiyasu@jaea.go.jp	A successful candidate will study electronic states of strongly correlated systems using numerical calculation techniques such as, dynamical density matrix renormalization group, density functional theory, and quantum Monte Carlo methods. Developing some programs is also required. In particular, the candidate needs to study transition metal oxides and its transport properties. Magnetic alloy, magnetic semiconductors, and spin Hall materials are also important targets.	Non-Radiation Worker
10	Advanced Science Research Center	Advanced Nuclear Science Research	Nuclear Science Research Institute (Tokai)	Tomotsugu Sawai	Research Coordination and Promotion Office	81-292-82-5641	sawai.tomotsugu@jaea.go.jp	Advanced nuclear physics/chemistry, materials science and biology relevant to the evolution of future nuclear science and technology.	Radiation Worker
11	Nuclear Science and Engineering Directorate	Research for mechanism of radiation/corrosion damage of reactor structural materials	Nuclear Science Research Institute (Tokai)	Yoshiyuki Kaji	Research Group for Radiation Materials Engineering	81-29-282-6162	kaji.yoshiyuki@jaea.go.jp	The objective of this study is to evaluate the long-term structural integrity of reactor structural materials in radiation/corrosive environment due to utilization of light water reactors effectively and safely.We are looking for one Post Doctoral researcher, who investigate the mechanism for radiation damage and corrosion damage in high temperature water by experimental procedures using the leading-edge equipments and facilities in JAEA and computational methods.	Radiation Worker

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12	Nuclear Science and Engineering Directorate	Study on Accurate Neutron Capture Cross Section Measurement Mehod	Nuclear Science Research Institute (Tokai)	Hideo Harada	Research Group for Applied Nuclear Physics	81-29-282-6789	harada.hideo@jaea.go.jp	Accurate nuclear data are required for development of nuclear transmutation system. Especially, neutron capture cross sections for minor actinides (MAs) and long-lived fission products (LLFPs) need to be improved since their uncertainties are large. In order to develop accutate measurement method, the assigned post doc fellow is requested to perform one or more topics from ; 1 Combinational use of activation and TOF method, 2 Accrate determination method of absolute sample amounts, 3Resonance parameter determination. The main instrument to be used is ANNRI installed at BL04/MLF/J-PARC.	Radiation Worker
13	Nuclear Science and Engineering Directorate	Studies on efficient separation and high-sensitive detaction of radioactive and harmful substances	Nuclear Science Research Institute (Tokai)	Kojiro Shimojo	Research group for green chemistry	81-29-282-5246	shimojo.kojiro@jaea.go.jp	Our research project focuses on the development of novel separation methods and high-sensitive detecton methods of radioactive and/or harmful substances in environmental water and wastewater. In this study, we create separation methods using novel ligands, separation membranes, adsorbents and biomolecule-immobilized materials, which possess high selectivity and binding ability for specific substances (e.g. Cs or Sr). Furthermore, we challenge the development of separation detection systems using ionic liquids or micro-TAS(micro-Total Analysis System), and biosensors, which can cause color variation responding to radioactive and/or harmful substances.We hope that applicant has experiences for organic synthesis, polymer synthesis and/or experiment on artificial recombination of genes; however, it doesn't matter whether applicant has these experiences described above or not if applicant works energetically with great interest in this project.	Radiation Worker
14	Nuclear Science and Engineering Directorate	Improvement of the PHITS code and its application studies	Nuclear Science Research Institute (Tokai)	Tastuhiko Sato	Research Group for Radiation Protection	81-29-282-5803	sato.tatsuhiko@jaea.go.jp	The Particle and Heavy Ion Transprot code System (PHITS) is a general purpose Monte Carlo particle transport simulation code, which can deal with the transport of nearly all particles over wide energy ranges. This research theme involves the improvement of models for simulating nuclear reactions and ionizations implemented in PHITS. In addition, application studies using the improved PHITS are encouranged to be performed.	Non-Radiation Worker
15	Nuclear Science and Engineering Directorate	Research on development and utilization of novel ligands for the recovery and separation of the rare and noble metals	Nuclear Science Research Institute (Tokai)	Yuji Sasaki	Research Group for Aqueous Separation Chemistry	81-29-282-5272	sasaki.yuji@jaea.go.jp	We have been studying the new technique to separate minor actinides by the wet-chemical method, which is faced to establish the ADS system. The new ligands developed in this work have a potential to recover not only metals described above but also the rare and noble metals. Using these organic materials, physical properties, i.e., viscosity, stability by heating, and solubility in solvent, and the recovery for actinide, fission products and rare metals will be studied at liquid-liquid or liquid-solid separation systems.	Radiation Worker
16	Nuclear Science and Engineering Directorate	Research of Accelerator-Driven System (ADS) for MA transmutation	Nuclear Science Research Institute (Tokai)	Kazufumi Tsujimoto	Nuclear Transmutation Group	81-29-282-6436	tsujimoto.kazufumi@jaea.go.jp	In order to reduce the burden of the geological disposal of high level waste (HLW), advanced nuclear system to transmute minor actinides (MA) included in HLW has been investigated . Since the uncertainties of the current MA nuclear data are supposed to be larger than those of other major nuclides, it is one of the most important issues to improve the MA nuclear data for neutronics design of the transmutation system. To improve the prediction accuracy of nuclear characteristics by new integral experiments associated for MA, our group has performed conceptual design study for a new fast critical assembly in which reactor physics experiments loading MA fuels will be possible. In this theme, efficient experimental plans to improve the MA nuclear data in the new facility will be investigated. Nuclear physics experiment will be also performed to investigate a nuclear instrumentation for the new facility.	Radiation Worker
17	Quantum Beam Science Directorate	Synthesis and characterization of high performance polymer electrolyte membranes containing highly conductive ion channels using radiation technique	Takasaki	Yasunari Maekawa	Quantum Beam Science Directorate	81-27-346-9410	maekawa.yasunari@jaea.go.jp	Using quantum beam technique, the polymer electrolyte membranes (PEMs) with high thermal stability and conductivity are developed for the application of fuel cell vehicles. The PEMs possessing nano-scale ion channels in thermally stable polymer films are synthesized; then, the hierarchical structures of the PEMs are analyzed using neutron and X-ray small angle scattering for revealing the relationship between PEM structures and fuel cell properties.	Radiation Worker
18	Quantum Beam Science Directorate	Development for intense terahertz light source and its application for the control of molecular orientation	Kizu (Kansai Photon Science Institute)	Masaaki Tsubouchi	Intense Laser Control of Material Group	81-774-71-3369	tsubouchi.masaaki@jaea.go.jp	In Kansai Photon Science Institute, we are now developing the high-power near infrared laser system as the driver laser for the generation of the intense terahertz (THz) light. The purpose of this study is to develop elemental technologies for high-power and high-quality THz light generation, and to realize the control of the molecular axis orientation by applying the intense THz light. The key technologies for the control of molecules, for example, the waveform control of the THz light, the measurement of the molecular orientation realized in the vacuum chamber, and so on, will be also developed with our group members.	Non-Radiation Worker
19	Fusion Research and Development Directorate	Transport simulation in Tokamak plasma edge	Aomori	Masatoshi Yagi / Kenji Tobita	Plasma Theory and Simulation Group / Fusion Reactor Design Group	81-175-71-6711 81-175-71-6670	yagi.masatoshi@jaea.go.jp tobita.kenji30@jaea.go.jp	It is an important researh subject to investigate transport characteristcs in plasma edge region of Tokamak, since particle and heat transport affect core plasma confinement and/or heat load on divertor section. For this purpose, transport model which describes plasma edge should be developed and simulation research is completed. Comparison study with analytical model is also done for verification and improvement of model. The obtained knowledge contributes to the development of integrated transport model with plasma core and edge.	Non-Radiation Worker
20	Fusion Research and Development Directorate	Structural and neutronics analysis on fusion blanket	Naka/Tokai	Takanori Hirose / Satoshi Sato	Blanket Technology Group / Fusion Neutronics Group	81-29-270-7516 81-29-282-6075	hirose.takanori@jaea.go.jp sato.satoshi92@jaea.go.jp	Major duty is development of breeding blankets for fusion reactor, including but not limited to the following topical areas: *Analysis of structural and thermal loads and combinations acting on fusion blanket *Design verification (thermal, structural and nuclear.) *Assessment on tritium production and recovery (analytical and experimental approach.) *Assessment of chemical compatibility of structural and functional materials in blanket environment.	Radiation Worker
21	Fusion Research and Development Directorate	Development of Superconducting Central Solenoid for JT-60SA	Naka	Kiyoshi Yoshida	JT-60 Magnet System Group	81-29-270-7460	yoshida.kiyoshi56@jaea.go.jp	The central solenoid for JT-60SA is a high performance superconducting magnet with Nb3Sn superconducting conductors and consists of four modules. The first module of the central solenoid is manufactured by end of 2013 and evaluated at 4K charging test. Main duties are to perform following subjects: (1) the preparation of testing, monitor charging test and evaluate the test results, (2) the design and development for the interface components between superconducting coils and other utilities.	Radiation Worker
22	Fusion Research and Development Directorate	Development of plasma control for attainment and sustainment of high-performance fusion plasmas	Naka	Hirotaka Kubo	Advanced Plasma Experiment Group	81-29-270-7330	kubo.hirotaka@jaea.go.jp	For attainment and sustainment of high-performance fusion plasmas in JT-60SA and ITER, it is essential to establish plasma control by understanding plasma self-regulation and parameter correlation. This theme is to develop real time control with consideration of the plasma self-regulation and parameter correlation by studying characteristics and mechanisms of responses of plasma parameters, such as the profiles of the plasma current, density, temperature, rotation, to plasma equilibrium control, heating, particle fuelling, etc. using JT-60 experimental data, simulation, etc.	Non-Radiation Worker
23	Geological Isolation Research and Development Directorate	Research on dadiometric dating using high-accuracy mass spectrometery	Tono	Koji Umeda	Neotectonics Research Group	81-572-53-0211	umeda.koji@jaea.go.jp	In order to evaluate geosphere stability for long-term isolation of radioactive waste, we recruit a postdoctoral fellow who can demonstrate his/her ability for radiometric dating using noble gas mass spectrometery and/or accelerator mass spectrometry . Applicants are required to have sufficient background in mass spectrometric analysis.	Non-Radiation Worker

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24	Geological Isolation Research and Development Directorate	Research on mass transport in deep geological environment	Tono	Katsuhiro Hama	Crystalline Environment Research Group	81-572-66-2244	hama.katsuhiro@jaea.go.jp	To understand the long-term behavior of the elements in deep geological environment, detailed evaluation of the content, distribution and isotopic composition of major and minor elements of both in the sedimentary and in the granite rocks should be carried out. Researcher can use rock samples obtained from the borehole investigation, also groundwater samples collected from existing boreholes. Researchers are required to have an adequate experience in the isotope analysis including radiochemical analysis. Regarding the radiochemical analysis, researchers should be able to carry out it in their own laboratory in the domestic university.	Non-Radiation Worker
25	Geological Isolation Research and Development Directorate	Study on engineering technologu for deep underground application	Tono	Toshinori Sato	Crystalline Environment Engineering Group	81-572-66-2244	sato.toshinori@jaea.go.jp	Mizunami Underground Research Laboratory has been studying and developing engineering technology for deep underground applications,These applications are multifaceted and are categorized as development of design and construction planning technology, development construction technology, development of countermeasure technology (grouting technology), and development of technology for construction and operation security. Based on the data of measurements for rock mass and supports, information of construction work et al., applicability of applications will be evaluated.	Non-Radiation Worker
26	Nuclear Hydrogen and Heat Application Research Center	Research and developemt on nuclear hydrogen production and heat utilization technology	Oarai	Yukio Tachibana	HTGR Design Group	81-29-266-7605	tachibana.yukio@jaea.go.jp	High Temperature Gas-cooled Reactor (HTGR) can meet a wide range of energy requirements because of its inherent safe characteristics and high temperature heat supply capability. For example, HTGR coupled with hydrogen production plant utilizing thermochemical water splitting process is expected to supply hydrogen to steel manufacturing industries as reducing agent as well as to fuel cell vehicles as fuel without reliance on fossil fuels and emission of carbon dioxide. The scope of this R&D is to establish an innovative concept of nuclear energy supply system by exploring the capability of HTGR.	Non-Radiation Worker
27	J-PARC Center	Studies for Spallation target of Transmutation Experimental Facility	J-PARC	Toshinobu Sasa	Transmutation Section	81-29-282-6948	sasa.toshnobu@jaea.go.jp	A 250kW Pb-Bi spallation target is planned to be installed in Transmutation Experimental Facility (TEF), which will be build within the framework of J-PARC project. In order to perform the material irradiation by simulating an operating condition of future accelerator-driven system (ADS), heavy irradiation of candidate materials for ADS by high current proton beam is scheduled. This theme considers to an specific improvement of irradiation performance of Pb-Bi target through the analyses of neutronics, thermal-hydraulics, structural strength, experiments by cold Pb-Bi loop, and so on. Throught these activities, we contribute to accelerate ADS realization and supplyment of design data of European prototype ADS.	Non-Radiation Worker
28	J-PARC Center	J-PARC Material Science Study by Using Neutron Scpectrometers	J-PARC	Kenji Nakajima	Neutron Science Section	81-29-284-6936	kenji.nakajima@j-parc.jp	JAEA installed neutron spectrometers at Materials & Life Science Facility at J-PARC to carry out investigations on materials and life science. The successful candidate will be engaged in material science studies including magnetism by using neutron instruments (BL14 and the others) at MLF, J-PARC. The candidate is also expected to take part in taking care of user program in his/her related science fields.	Radiation Worker
29	Oarai Research and Developmemt Center	Corrosion behavior of various nuclear metals and alloys during interim or long term storage	Oarai	Masaki Inoue	Materials Monitoring Section	81-29-267-7832	inoue.masaki@jaea.go.jp	Corrosion behavior of metals and alloys from spent nuclear fuel pins/rods and structural materials used in sodium cooled and water cooled reactors will be investigated to evaluate their structural integrity during interim or long term storage. The materials will include, for example, low alloy steels, ferritic and austenitic stainless steels, zirconium alloys and aluminum alloys. Unirradiated materials are also important to understand fundamental aspects. Chemical environments are anticipated to be dry and/or wet(aqueous) conditions. Corrosion properties will be characterized by means of immersion tests, electro-chemical tests, optical microscopy, scanning electron microscopy and so on.	Radiation Worker
30	Neutron Irradiation and Testing Reactor Center	Development of In-core measuring Instruments	Oarai	Kunihiko Tsuchiya	Irradiation Engineering Section	81-29-266-7030	tsuchiya.kunihiko@jaea.go.jp	This study aims at the development of in-core measuring instruments with real time and high precision under neutron irradiation conditions. As for in-core measuring instruments, self powered gamma-ray detector, gas concentration sensor and thermocouples type water level gauge and others will be developed through selection of component materials with radiation resistance, and the establishment of production methods. Out-pile and in-pile behaviors of developed instruments will be clarified and utilized for improvement of reliability. Through these technical developments, instruments with higher performance will be sought.	Radiation Worker
31	Oarai Research and Developmemt Center	Research on correlative evaluation of the mechanical properties and microstructures of nuclear materials	Oarai	Toshihiko Inoue	Materials Monitoring Section	81-29-267-7832	inoue.toshihiko@jaea.go.jp	It is necessary to correlate the strength characteristics and microstructural features in order to understand the effect of neutron irradiation on the changes in mechanical and microstructural properties of nuclear materials. In this study, we will carry out a strength properties evaluation examination and microstructural observation using neutron-irradiated materials, and perform an experimental evaluation about a strength characteristic and the correlation of the microstructure and improve the knowledge about nuclear core and structural materials.	Radiation Worker
32	Applied Laser Technology Institute	Development of Maintenance Technology of Nuclear Power Plant Material by Pulse Laser Processing	Tsuruga	Akihiko Nishimura	Applied Laser Technology Development Office	81-770-21-5050	nishimura.akihiko@jaea.go.jp	Development of a remote probing system by a pulse laser processing is a key issue. Heat and water proof with radiation resistance is required for the remote probing system. Laser processing, endoscope observation, plasma spectroscopy and visual imaging are required to be integrated in the system. The system is used to inspect in the limited tubular space, which is available for aging nuclear power plants.	Non-Radiation Worker
33	FBR Safety Technology Center	Research on innovative non-destructive inspection technique for FBRs using Laser-ultrasonics, EMATs and Eddy Current	Tsuruga	Masashi Ueda	Maintenance Technology Development Group	81-770-39-1031	ueda.masashi@jaea.go.jp	The components and equipments of sodium-cooled fast breeder reactors require special inspection techniques such as under sodium visualization and remote maintenance robots, because sodium is opaque, chemically active, and has to be kept at high temperature (～200º C) even during maintenance. In this research, innovative non-destructive inspection techniques based on Laser-ultrasonics, EMATs and Eddy Current will be developed by experiments and simulations.	Non-Radiation Worker
34	Takasaki Advanced Radiation Research Institute	R&D on ion microbeam technology	Takasaki	Yuichi Saitoh	Beam Engineering Division	81-273-346-9650	saito.yuichi83@jaea.go.jp	A highly motivated researcher is recruited for R&D on ion microbeam technology and its applications using light or heavy ions with the energies of MeV per nucleon or more, at TIARA of Takasaki Advanced Radiation Research Institute. Advanced techniques of ion beam focusing and targeting, or of single ion hitting in micro/nanometer level spatial resolution have been developed and utilized so far to realize three-dimensional fine processing or analysis of various materials or biological substances. Applicants, who may have backgrounds of various research fields, will be expected to expand the applicability of this peerless technology, or to explore the frontier of its applications, such as dynamic analysis of cesium compounds in an ecosystem or micro particles in atmosphere, or estimation of radiation effects on semiconductors under radiation environment, by utilizing unique characteristics of ion beam interaction with materials.	Radiation Worker

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35	Center for Computational Science and e-Systems	Computational Studies for Physicochemical and Dynamical Properties of Radionuclides in the Environment	Kashiwa	Masahiko Machida	Simulation technology Research and Development Office	81-4-7135-2349	machida.masahiko@jaea.go.j	Radioactive Caesium and other radionuclides transform their chemical forms sensitively responding to their environment from soil to living organism. However, details of their chemical forms in atomic and molecular level are not still well-known. Therefore, any insights are highly in great demand. Furthermore, information on their forms may inspire us to develop effective methods for decontamination. In this application, applicants mainly employs computational techniques like first-principle calculations and Molecular Dynamics and clarifies their physicochemical and dynamical properties in various environment as well as their chemical morphology	Non-Radiation Worker
36	Department of Science and Technology for Nuclear Material Management	Development of advanced safeguards technology focusing on measurement of nuclear materials contained in molten core fuels	Nuclear Science Research Institute (Tokai)	Masaru Watahiki	Technology Development Office	81-29-284-3456	watahiki.masaru@jaea.go.jp	It is required to demonstrate to the domestic and the international community that nuclear materials contained in molten core fuels (fuel debris) are not used for non-peaceful purpose. In this study, in case that passive gamma-rays or neutron measurement is conducted for nuclear materials quantification inside fuel debris, sensitivity analysis of a variety of parameters which affect gamma-ray or neutron measurement is carried out using simulation model and methods for accuracy improvement, such as correction of self-shielding of gamma-rays, are investigated. And then, the concept of measurement system design is developed and evaluated using computer simulation toward the measurement system fabrication. In addition, the other state-of-art technologies which are applicable to the Fukushima Daiichi NPP are also pursued.	Non-Radiation Worker
37	Nuclear Safety Research Center	Study on the degradation behavior and physical property changes of fuel under severe accident conditions.	Nuclear Science Research Institute (Tokai)	Tomoyuki Sugiyama	Fuel Safety Research Group	81-29-282-5955	sugiyama.tomoyuki@jaea.go.jp	In the accident occurred at Fukushima dai-ichi NPP, it is considered that the significant oxidation of fuel cladding and the melting of reactor component material occurred due to temperature increase following loss-of-coolant condition. In this study, the process from loss-of-coolant condition to fuel degradation will be clarified by performing oxidation test on cladding, melting and reaction test on fuel and /or the calculation using an analysis code. Effective and useful information about the prediction of accident progression and the fuel handling after accident will be also obtained by investigating the physical and chemical properties of the fuel which experienced severe conditions. Through the estimation of the accident progression at Fukushima dai-ichi NPP, this study contributes to decommission measures such as fuel retrieve from the NPP.	Non-Radiation Worker
38	Nuclear Safety Research Center	Study on the behaviors of oxidation and embrittlement and physical property changes of fuel cladding under severe accident conditions.	Nuclear Science Research Institute (Tokai)	Tomoyuki Sugiyama	Fuel Safety Research Group	81-29-282-5955	sugiyama.tomoyuki@jaea.go.jp	Nitrogen gas was injected into reactor and containment vessels in the Fukushima dai-ichi NPP accident, and in such steam-nitrogen mixture gas, it is probable that the reactions different from those in steam environment occur to fuel cladding. In order to understand how phenomena proceed from loss-of-coolant condition to severe accident, it is important to know the effect of atomosphere on the oxidation and embrittlement of cladding. However, the information has not been sufficiently obtained concerning the behaviors of oxidation and embrittlement of cladding in steam containing nitrogen. In this study, the effects of atomosphere on the behaviors of oxidation and embrittlement of cladding will be investigated. By the measurement and evaluation of the physical properties of the claddings oxidized in various atomosphere, the information which is needed for the improvement of a fuel behavior analysis code for loss-of -coolant-accident will be obtained, and the information helps the precision improvement of the evaluation how the accident progressed in the reactors of Fukushima dai-ichi NPP.	Non-Radiation Worker
39	Quantum Beam Science Directorate	Elucidation of Cs adsorption-desorption mechanism on clay minerals and development of Cs removal materials for volume reduction of contaminated wastes using Quantum Beam as a probe.	Nuclear Science Research Institute (Tokai)	Shinichi Suzuki	Actinide Coordination Chemistry	81-29-282-6483	suzuki.shinichi@jaea.go.jp	In connection with the accident of the Fukushima nuclear power plant, the environmental pollution by radioactive cesium serves as a serious social problem. In order to solve this problem, we are carrying out the two major researches that is elucidation of Cs adsorption-desorption for clay minerals and is development of new crown ether compounds for waste-zero emission of used materials. Especially these researches contribute to elucidations of various condensed structure in the clay minerals, and creation of various new organic ligands. In order to elucidate about metal coordination mechanism with these materials, we promote researches of physical properties and structure controls, which use complexly quantum beams such as a neutron scattering and x-ray absorption fine structure. Although it is desirable that he is experienced in macromolecule and/or organic synthesis, if it is an eager young researcher, neither an experience nor specialty will be asked.	Radiation Worker
40	Tokai Research and Development Center	Research and development of thermal-hydraulic behavior of core melt	Nuclear Science Research Institute (Tokai)	Hiroyuki Yoshida	Accident Progression Analysis Technology Development Group	81-29-282-5275	yoshida.hiroyuki@jaea.go.jp	A numerical simulation method to predict thermal-hydraulic behavior of core melt in the reactor pressure vessel at severe accident will be developed in this research. Eulerian and Lagrangian numerical simulation technique will be combined to simulate thermal-hydraulic motion of fluid (for example, water, steam and hydrogen) and melting/solidification of the nuclear fuel and the component materials uniformly. This simulation method will be used to evaluate the current status of the Fukushima Daiichi nuclear power plant by performing large scale numerical simulations of thermal-hydraulic behavior at severe accident.	Non-Radiation Worker
41	Applied Laser Technology Institute	Research on improvement of computational science simulation models for in a laser cutting process	Tsuruga	Toshiharu Muramatsu	Applied Laser Technology Development Office	81-770-21-5060	muramatsu.toshiharu@jaea.go.jp	Japan Atomic Energy Agency (JAEA) is performing research and development on cutting technologies for a decommissioning process of aging nuclear power plants including the Fukushima Daiichi's reactors using a higher power laser light . The post doctral fellow is expected to work on the improvement of the computational science simulation code SPLICE, which is designed to deal with gas-liquid-solid consolidated incompressible viscous flows with a phase change process, to tune various laser irradiation conditions. Then he or she should validate quantivetatively the improved code based on laser cutting experiments.	Non-Radiation Worker