MXG16: The 6th Yamada workshop on Muonic X and Gamma ray Spectroscopy 2016

from Monday, 26 September 2016 at **08:45** to Wednesday, 28 September 2016 at **18:00** (Japan)
at **Osaka University, Suita, Osaka (Arata Memorial hall)**
Suita, Osaka

Manage

Description The 6th Yamada workshop on Muonic X and Gamma ray Spectroscopy, MXG16, will be held for September 26 – 28, 2016 in Osaka University, Suita, Osaka, Japan. The main goal of this workshop is to open up new opportunities for researchers from academia and industry to use muonic X-rays and gamma-rays, which are emitted from material after a negative muon stopped in it. In the workshop, we will discuss new science frontiers by muonic X and gamma ray spectroscopy. Recently, new developments have been made on spectroscopic studies of muonic X-rays and muon capture gamma rays and DC/pulsed muon probes. They have made it possible to study new aspects of fundamental science, including nuclear particle and astro nuclear physics, atomic and molecular chemistry, electron transport life science, astro-geo science and related science. The workshop aims to discuss current subjects with active scientists in these fields and to promote new inputs and exchanges of scientists over the fields.

A tentative list of workshop topics to be covered includes:

- Neutrino nuclear physics and astro neutrino physics by muon weak interactions. Nuclear and proton structures via muon EM.
- Atomic and molecular chemistry
- Elemental and isotope identification by muonic X and/or gamma rays spectroscopy
- Astro and geo science by muonic X rays and gamma rays
- Muon sources and beam channels
- Other any topic related with negative muons

This is the 6th Yamada Workshop organized and supported by the Yamada Science Foundation, and is held under the auspices of Research Center for Nuclear Physics (RCNP), Osaka University and the Society of Muon and Meson Science of Japan.

The MXG16 workshop is followed by a related workshop NNR16: Neutrino nuclear responses for double beta decays and astro-neutrino interactions, which wil be held at the same veuse from 29-30 September, 2016.

Go to day

Monday, 26 September 2016

09:00 - 09:30	Registration
09:30 - 09:40	Welcome *10′* Speaker: Hiro Ejiri (Board of Yamada science foundation)
09:40 - 09:50	Welcome *10′* Speaker: Takashi Nakano (Director of RCNP, Osaka University)
09:50 - 10:20	MuSIC *30′* Speaker: Akira Sato (Osaka University, Japan)
10:20 - 10:50	CAGRA *30′* Speaker: Nori Aoi (RCNP, Osaka Univerity, Japan)
10:50 - 11:05	Coffee break
11:05 - 11:35	J-PARC Muon Facility, MUSE *30′* Speaker: Yasuhiro Miyake (KEK, Japan)
11:35 - 12:05	Transmission Muon Microscopy *30′* Speaker: Yukinori Nagatani (NIPS, Japan)
12:05 - 12:25	Future prospects of J-PARC muon facility *20′* Speaker: Naritoshi Kawamura (KEK, Japan)
12:25 - 13:55	Lunch ( )
13:55 - 14:25	Elemental composition analysis by muon induced X-ray and gamma-ray *30′* Speaker: Kenya Kubo (ICU, Japan)
14:25 - 14:55	Chemical Environmental Effect in Muon capture Process for Carbon Oxide and Nitrogen Oxide *30′* Speaker: Kazuhiko Ninomiya (Osaka University, Japan)
14:55 - 15:25	Elemental analysis using negative muons at the ISIS muon facility *30′* Speaker: Adrian Hillier (STFC, ISIS neutron and muon facility, UK)
15:25 - 15:40	Coffee break
15:40 - 16:10	The Development of Non-Destructive Analysis System with Negative Muon Beam for Industrial Device at JPARC MUSE *30′* Speaker: Motonobu Tampo (KEK, Japan)

16:10 - 16:40 Non-destructive compositional analysis on a lithium-ion battery by muonic x-ray *30'*
Speaker: Izumi Umegaki (Toyota central R&D labs, Japan)

16:40 - 16:55 Break

16:55 - 17:55 Tour To MuSIC (RCNP)

Tuesday, 27 September 2016

09:00 - 09:30 Nuclear Transmutation by Muon Nuclear Capture Reaction *30'*
Speaker: Teiichiro Matsuzaki (RIKEN, Japan)

09:30 - 09:50 Muon Nuclear Capture Reaction on Pd Isotopes *20'*
Speaker: Takeshi Saito (University of Tokyo)

09:50 - 10:20 Muon production with MERIT *30'*
Speaker: Yoshiharu Mori (KURRI, Japan)

10:20 - 10:35 Coffee break

10:35 - 11:05 Muon Spectroscopy with Rare Nuclei *30'*
Speaker: Patrick Strasser (KEK, Japan)

11:05 - 11:35 Measurement of the proton Zemach radius from the hyperfine splitting energy in muonic hydrogen *30'*
Speaker: Masaharu Sato (RIKEN, Japan)

11:35 - 11:55 Possibility of muon scattering experiment at RCNP-MuSIC *20'*
Speaker: Dai Tomono (RCNP, Osaka University, Japan)

11:55 - 12:25 Precision Measurement of the Monism Hyperfine Structure Interval *30'*
Speaker: Koichiro Shimomura

12:25 - 13:55 Lunch

13:55 - 14:25 Theoretical description of muon-capture rates - a step towards double-beta-decay nuclear matrix elements *30'*
Speaker: Jouni Suhonen (Univ. Jyvaskyla, Finland)

14:25 - 14:45 Muon X gamma spectroscopy for double beta decays and astro neutrinos *20'*
Speaker: Hiro Ejiri (RCNP, Osaka University, Japan)

14:45 - 15:15 Muon capture reaction on 100Mo, 93Nb and 181Ta for neutrino nuclear response *30'*
Speaker: Izyan Hazwani Hashim (Universiti Teknologi Malaysia, Malasia)

15:15 - 15:35 Nuclear excitation and neutron emission after muon capture reaction calculated by neutron statistical model *20'*
Speaker: Siti Syahirah Saroni (Universiti Teknologi Malaysia, Malaysia)

15:35 - 16:05 TBD *30'*
Speaker: Kai Zuber (Inst. f. Kern– und Teilchenphysik, Germany)

16:05 - 16:15 Coffee break

16:15 - 17:45 Poster Session

16:15 **TBD** *20'*
Speaker: Makoto Inagaki (Osaka University)

16:15 **Development of muonic atom beam extraction by using intense negative muon beam of J-PARC MUSE** *20'*
Speaker: Go Yoshida (Osaka University)

16:15 **TBD** *20'*
Speaker: Go Yoshida (Osaka University)

16:15 **TBD** *20'*
Speaker: Ting Sam Wong (Osaka University)

16:15 **Current analysis status of the AlCap experiment** *20'*
Speaker: Mark Wong (Osaka University)

16:15 **DeeMe: an experiment to search for muon to electron conversion at J-PARC MLF** *1h30'*
Speaker: Natsuki Teshima (Osaka City University)

16:15 **Nuclear temperature and PEQ effect of neutron cascade** *1h30'*
Speaker: Izyan Hazwani Hashim (Universiti Teknologi Malaysia, Malaysia)

16:15 **Muon-gamma spectroscopy for neutrino nuclear responses** *1h30'*
Speaker: Siti Syahirah Saroni (Universiti Teknologi Malaysia, Malaysia)

16:15 **A test experiment at J-PARC-MUSE with use of intence pulsed negative muons.** *1h30'*
Speaker: Koji Hamada (KEK)

16:15 **Construction and commissioning of the new DC muon beam line, RCNP-MuSIC in Osaka University** *20'*
Speaker: Dai Tomono (RCNP, Osaka University)

16:15 **Measurement of magnetic field distribution in the target space for precision measurement of muonium hyperfine structure** *1h30'*
Speaker: Shun Seo (University of Tokyo)

16:15 **TBD (COMET)** *1h30'*
Speaker: Yu Nakazawa (Osaka University)

16:15 **Development of neutron detector for the muonium HFS precision measurement** *1h30'*
Speaker: Daisuke Yagi (University of Tokyo)

17:45 - 18:00 Break

18:00 - 20:00 Banquet (Restaurant Minerva on Suita campus)

Wednesday, 28 September 2016

09:00 - 09:30 Theoretical nuclear physics aspects of conventional and exotic nuclear muon capture channels *30'*
Speaker: Haris Kosmas (Univ. Ioania, Greece)

09:30 - 09:50 Electron catalogue of mu-X-rays spectra *20'*
Speaker: Daniya Zinatulina (JINR, Russia)

09:50 - 10:15 Muon capture studies for Double Beta decay in different isotopes *25'*
Speaker: Daniya Zinatulina (JINR, Russia)

10:15 - 10:45 Nuclear matrix elements in double beta decay from charge-exchange and muon capture processes *30'*
Speaker: Dieter Frekers (Univ. Muenster, Germany)

10:45 - 11:00 Coffee break

11:00 - 11:30 Neutrino-induced Nuclear Reactions studied with Muon Capture *30'*
Speaker: Tatsushi Shima (RCNP, Osaka University, Japan)

11:30 - 12:00 Muon catalysed d-t fusion *30'*
Speaker: Katsuhiko Ishida (RIKEN, Japan)

12:00 - 12:30 Otho-para effect in d-d MuCF *30'*
Speaker: Hiroshi Imao (RIKEN, Japan)

12:30 - 12:55 Muon capture for nuclear three body force *25'*
Speaker: Keiji Takahisa (RCNP, Osaka University, Japan)

12:55 - 14:25 Lunch

14:25 - 14:45 The first measurement of fluorescent X-rays from carbonaceous chondrite using DC muon beam *20'*
Speaker: Kentaro Terada (Osaka University, Japan)

14:45 - 15:05 Muonic X-ray Analysis for Extraterrestrial Materials using J-PARC MUSE *20'*
Speaker: Takahito Osawa (JAEA, Japan)

15:05 - 15:35 Challenge to monitoring of biofunctions by μSR *30'*
Speaker: Yoko Sugawara (Kitazato University, Japan)

15:35 - 15:55 Nuclear gamma-rays from stopped muon capture reaction for nuclear isotope detection *20'*
Speaker: Hiro Ejiri (RCNP, Osaka University, Japan)

15:55 - 16:05 Closing remarks *10'*
Speaker: TBA