MNT2024 –Exploring the heavy exotic neutron-rich nuclides via multinucleon transfer reactions–
2 – 5 July, 2024
Room #201 of Nishina RIBF Bldg. (E01), RIKEN, Wako, Japan

2 July, Tuesday

9:20 – Check-in counter

Opening session Chair: Yutaka Watanabe (WNSC, IPNS, KEK)

10:00 – 10:05	Yutaka Watanabe	WNSC, IPNS, KEK	Opening address
10:05 – 10:10	Naohito Saito	IPNS, KEK	Welcome address
10:10 – 10:15	Hiroyoshi Sakurai	RIKEN Nishina Center	Welcome address

Session 1 Chair: Yutaka Watanabe (WNSC, IPNS, KEK)

10:15 – 10:45	Yoshikazu Hirayama	WNSC, IPNS, KEK	KISS for nuclear spectroscopy of MNT products
10:45 – 11:15	Timo Dickel	GSI	MNT experiments with stable and secondary beams at the FRS and Super-FRS Ion Catcher
11:15 – 11:45	Anu Kankainen	University of Jyväskylä	Production and studies of neutron-rich nuclei at IGISOL

11:45 – 13:15 **Lunch (90 min)**

Session 2 Chair: Andreyev (University of York)

13:15 – 13:45	Alexander Karpov	JINR	Status of MNT studies at JINR and perspectives
13:45 – 14:15	Katsuhisa Nishio	JAEA	Separation of evaporation residues produced in MNT reactions using JAEA-Recoil Mass Separator
14:15 – 14:45	Jonathan Bequet	CEA	Synthesis of heavy nuclei in multinucleon transfer reaction ^{136}Xe + ^{238}U close to 0 degree

14:45 – 15:10 **Break (25 min)**

Session 3 Chair: Timo Dickel (GSI)

15:10 – 15:40	Devaraja HM	JINR	MNT studies with Velocity Filters
15:40 – 16:05	Galina Knyazheva	JINR	The experimental study of properties of MNT fragments formed in the reactions with ^{238}U
16:05 – 16:25	Kris Hagel	Cyclotron Institute, Texas A&M University	Multi-Nucleon-Transfer and the production of Heavy Elements

16:25 – 16:50 **Break (25 min)**

Session 4 Chair: Alexander Karpov (JINR)

16:50 – 17:20	Jan Sarén	University of Jyväskylä	Studies of MNT reactions at the Coulomb barrier with Jväskylä in-flight separators
17:20 – 17:50	Emanuele Vardaci	INFN, Naples	MNT studies with TOF methods at GSI, JYFL and Dubna
17:50 – 18:15	Sota Kimura	WNSC, IPNS, KEK	Current status and prospects of MNT study with helium gas-cell + MRTOF system towards N = 126 and 152

3 July, Wednesday

Session 5 Chair: Katsuhisa Nishio (JAEA)

9:10 – 9:40	Vyacheslav Saiko	JINR	Theoretical investigation of multinucleon transfer reactions within the dynamic model based on Langevin equations
9:40 – 10:10	Julia Even	University of Groningen	What is NEXT? A setup to study Neutron-rich, heavy, EXotic nuclei produced in multinucleon Transfer reactions

10:10 – 10:35 **Break (25 min)**

Session 6 Chair: Katsuhisa Nishio (JAEA)

10:35 – 11:05	Kazuyuki Sekizawa	Tokyo Institute of Technology	Microscopic Approaches for Multinucleon Transfer Reactions Beyond TDHF: Future Perspective
11:05 – 11:35	Alexandra Zadvornaya	The University of Edinburgh	Development and commissioning of the MNT gas cell for IGISOL

11:35 – 13:05 **Lunch (90 min)**

13:05 – 14:45 Facility tour (100 min)

14:45 – 15:05 **Break (20 min)**

Session 7 Chair: Michiharu Wada (WNSC, IPNS, KEK)

15:05 – 15:30	Yutaka Watanabe	WNSC, IPNS, KEK	Future plan of KISS for spectroscopy of neutron-rich actinoids
15:30 – 16:00	Paul Constantin	ELI-NP/IFIN-HH	Simulation of MNT experiments with INCREASE (GSI) and IGISOL (JYFL)
16:00 – 16:20	Penghui Chen	Yangzhou University	Shell effect in multinucleon transfer reactions
16:20 – 16:40	Zhaoqing Feng	South China University of Technology	Cluster transfer and cluster emission in massive transfer reactions

16:40 – 17:05 **Break (25 min)**

Session 8 Chair: Julia Even (University of Groningen)

17:05 – 17:35	Maxime Brodeur	University of Notre Dame	The N = 126 Factory
17:35 – 17:55	Adrian Valverde	Argonne National Laboratory	Opportunities with the N = 126 Factory at Argonne National Laboratory
17:55 – 18:15	Guy Savard	Argonne National Laboratory	Status of the Commissioning of the N = 126 factory at ANL
18:15 – 18:35	Teresa Kurtukian Nieto	IEM-CSIC	Prospects of MNT studies at N = 126 for r-process nucleosynthesis with the ISOLDE Superconducting Recoil Separator

4 July, Thursday

Session 9 Chair: Yoshikazu Hirayama (WNSC, IPNS, KEK)

9:10 – 9:40	Andrei Andreyev	University of York	ISOLDE studies of the neutron-rich nuclides east of ^{208}Pb
9:40 – 10:10	Praveen Srivastava	Indian Institute of Technology-Roorkee	Shell model study of allowed and forbidden beta decay in the Pb region

10:10 – 10:35 **Break (25 min)**

Session Chair: Yoshikazu Hirayama (WNSC, IPNS, KEK)

10:35 – 11:00	Momo Mukai	WNSC, IPNS, KEK	The progress of in-gas-cell laser ionization spectroscopy of neutron-rich tungsten isotopes
11:00 – 11:20	Cenxi Yuan	Sun Yat-sen University	Configuration-Interaction Shell Model (CISM) Understanding of Medium and Heavy Mass Nuclei
11:20 – 11:40	Menglan Liu	Sun Yat-sen University	Exploration on the effective nuclear force for the $N > 126$ nuclei

11:40 – 13:10 **Lunch (90 min)**

Session 11 Chair: Momo Mukai (WNSC, IPNS, KEK)

13:10 – 13:40	Rafael Ferrer-Garcia	KU Leuven	High-resolution resonance ionization spectroscopy at the S3-Low Energy Branch of the GANIL-SPIRAL2 facility
13:40 – 14:00	Arno Claessens	KU Leuven	Laser ionization of thorium via Rydberg states in hypersonic gas jets
14:00 – 14:20	Fedor Ivandikov	KU Leuven	Simulation-aided offline optimization of the JetRIS apparatus

14:20 – 15:45 **Break (25 min)**

Session 12 Chair: Hironobu Ishiyama (RIKEN Nishina Center)

15:45 – 15:10	Toshitaka Kajino	Beihang University	Origin of the r-process elements in cosmic evolution and nuclear physics
15:10 – 15:30	Filip Kondev	Argonne National Laboratory	Studies of *K* Isomers using Multi-nucleon Transfer Reactions and Gammasphere
15:30 – 15:50	Anabel Morales	IFIC	Discovery of new ms-isomers in ^{213}Tl and ^{215}Tl at RIBF-RIKEN

15:50 – 16:15 **Break (25 min)**

Session 13 Chair: Sota Kimura (WNSC, IPNS, KEK)

16:15 – 16:45	Masato Asai	JAEA	Study of neutron-rich Fm and transfermium nuclei with ^{254}Es target and MNT
16:45 – 17:05	Yoshihiro Aritomo	Kindai Unviersity	Systematic study of fission process in heavy and superheavy mass regions related to multinucleon transfer reactions

18:00 – 20:00 **Social dinner at Hirosawa Club (C72)**

5 July, Friday

Session 14: Chair: Marco Rosenbusch (RIKEN Nishina Center)

9:10 – 9:40	Zsolt Podolyák	University of Surrey	^{208}Pb fragmentation at BigRIPS vs MNT reactions to produce N ~ 126 nuclei
9:40 – 10:10	Oleg Tarasov	FRIB/MSU	Production and discovery of high-Z neutron-rich isotopes at NSCL and FRIB

10:10 – 10:35 **Break (25 min)**

Session 15: Chair: Marco Rosenbusch (RIKEN Nishina Center)

10:35 – 11:05	Dan Watts	University of York	Photoinduced many proton knockout – a new method to access neutron rich nuclei?
11:05 – 11:35	Zhong Liu	IMP, CAS	Status of the MNT program and its future plan at IMP

11:35 – 13:05 **Lunch (90 min)**

Session 16: Chair: Peter Schury (WNSC, IPNS, KEK)

13:05 – 13:30	Jason Holt	TRIUMF	Ab initio calculations of heavy, exotic nuclei for r-process nucleosynthesis
13:30 – 13:55	Gheorghe Iulian Stefan	IPN Orsay	NEWGAIN project
13:55 – 14:15	Alisher Sanetullaev	New Uzbekistan University	Exploring exotic nuclei via multinucleon transfer reactions using light neutron-rich beams
14:15 – 14:35	Gonika	Inter-University Accelerator Center, New Delhi	Coupled reaction channel description of single-nucleon transfer in ^{40}Ca + ^{96}Zr
14:35 – 14:55	Chandra Kumar	Inter-University Accelerator Center, New Delhi	Study of transfer reactions in ^{28}Si + ^{140,142}Ce using a recoil separator

14:55 – 15:20 **Break (25 min)**

Session 17: Chair: Anu Kankainen (University of Jyväskylä)

15:20 – 15:40	Franziska Maier	FRIB/MSU	Highly selective and high-flux MR-ToF mass separation
15:40 – 16:10	Marco Rosenbusch	RIKEN Nishina Center	The mrtof mass measurement project at BigRIPS
16:10 – 16:35	Jinn Ming Yap	The University of Hong Kong	Operation and Perspectives of the ZeroDegree Helium Gas Catcher at RIKEN

16:35 – 16:40 Closing