

# **MNT2024 - Exploring the heavy exotic neutron-rich nuclides via multinucleon transfer reactions**

## **Report of Contributions**

Contribution ID: 25

Type: **not specified**

## Opening address

*Tuesday, 2 July 2024 10:00 (5 minutes)*

**Presenter:** WATANABE, Yutaka (KEK)

**Session Classification:** Opening session

Contribution ID: 26

Type: **not specified**

## Welcome address

*Tuesday, 2 July 2024 10:05 (5 minutes)*

**Presenter:** SAITO, Naohito (KEK)

**Session Classification:** Opening session

Contribution ID: 27

Type: **not specified**

## Welcome address

*Tuesday, 2 July 2024 10:10 (5 minutes)*

**Presenter:** SAKURAI, Hiroyoshi (RIKEN Nishina Center for Accelerator-Based Science)

**Session Classification:** Opening session

Contribution ID: 29

Type: **not specified**

## **KISS for nuclear spectroscopy of MNT products**

*Tuesday, 2 July 2024 10:15 (30 minutes)*

**Presenter:** HIRAYAMA, Yoshikazu (IPNS, KEK)

**Session Classification:** Session

Contribution ID: 30

Type: **not specified**

## **MNT experiments with stable and secondary beams at the FRS and Super-FRS Ion Catcher**

*Tuesday, 2 July 2024 10:45 (30 minutes)*

**Presenter:** DICKEL, Timo (GSI Helmholtzzentrum für Schwerionenforschung)

**Session Classification:** Session

Contribution ID: 31

Type: **not specified**

# Production and studies of neutron-rich nuclei at IGISOL

*Tuesday, 2 July 2024 11:15 (30 minutes)*

**Presenter:** KANKAINEN, Anu (University of Jyväskylä)

**Session Classification:** Session

Contribution ID: 32

Type: **not specified**

## **Status of MNT studies at JINR and perspectives**

*Tuesday, 2 July 2024 13:15 (30 minutes)*

**Presenter:** KARPOV, Alexander (JINR)

**Session Classification:** Session



Contribution ID: 33

Type: **not specified**

## **Synthesis of heavy nuclei in multinucleon transfer reaction $^{136}\text{Xe} + ^{238}\text{U}$ close to 0 degree**

*Tuesday, 2 July 2024 14:15 (30 minutes)*

**Presenter:** SULIGANO, Barbara (CEA)

**Session Classification:** Session

Contribution ID: **34**

Type: **not specified**

## **MNT studies with Velocity Filters**

*Tuesday, 2 July 2024 15:10 (30 minutes)*

**Presenter:** HM, DEVARAJA (FLNR, JINR)

**Session Classification:** Session

Contribution ID: 35

Type: **not specified**

## **The experimental study of properties of MNT fragments formed in the reactions with $^{238}\text{U}$**

*Tuesday, 2 July 2024 15:40 (25 minutes)*

**Presenter:** KNYAZHEVA, Galina (Joint Institute for Nuclear Research)

**Session Classification:** Session

Contribution ID: 36

Type: **not specified**

## **Multi-Nucleon-Transfer and the production of Heavy Elements**

*Tuesday, 2 July 2024 16:05 (20 minutes)*

**Presenter:** HAGEL, Kris (Cyclotron Institute, Texas A & M University)

**Session Classification:** Session

Contribution ID: 37

Type: **not specified**

## **Studies of MNT reactions at the Coulomb barrier with Jyväskylä in-flight-separator**

*Tuesday, 2 July 2024 16:50 (30 minutes)*

**Presenter:** SAREN, Jan (University of Jyväskylä)

**Session Classification:** Session

Contribution ID: **38**

Type: **not specified**

## **MNT studies with TOF methods at GSI, JYFL and Dubna**

*Tuesday, 2 July 2024 17:20 (30 minutes)*

**Presenter:** VARDACI, Emanuele (INFN, Naples)

**Session Classification:** Session

Contribution ID: 39

Type: **not specified**

## **Current status and prospects of MNT study with helium gas-cell + MRTOF system towards N = 126 and 152**

*Tuesday, 2 July 2024 17:50 (25 minutes)*

**Presenter:** Dr KIMURA, Sota (KEK)

**Session Classification:** Session

Contribution ID: 40

Type: **not specified**

# **Theoretical investigation of mutinucleon transfer reactions within the dynamic model based on Langevin equations**

*Wednesday, 3 July 2024 09:10 (30 minutes)*

**Presenter:** Mr SAIKO, Vyacheslav (FLNR JINR / INP)

**Session Classification:** Session



Contribution ID: 41

Type: **not specified**

## **What is NEXT? A setup to study Neutron-rich, heavy, EXotic nuclei produced in multinucleon Transfer reactions**

*Wednesday, 3 July 2024 09:40 (30 minutes)*

**Presenter:** EVEN, Julia (University of Groningen)

**Session Classification:** Session

Contribution ID: 42

Type: **not specified**

## **Microscopic approaches for multinucleon transfer reactions beyond TDHF: recent progress**

*Wednesday, 3 July 2024 10:35 (30 minutes)*

**Presenter:** Dr SEKIZAWA, Kazuyuki (Tokyo Institute of Technology)

**Session Classification:** Session

Contribution ID: 43

Type: **not specified**

## **Development and commissioning of the MNT gas cell for IGISOL**

*Wednesday, 3 July 2024 11:05 (30 minutes)*

**Presenter:** ZADVORNAYA, Alexandra (The University of Edinburgh)

**Session Classification:** Session

Contribution ID: 44

Type: **not specified**

## **Future plan of KISS for spectroscopy of neutron-rich actinoids**

*Wednesday, 3 July 2024 15:05 (25 minutes)*

**Presenter:** WATANABE, Yutaka (KEK)

**Session Classification:** Session

Contribution ID: 45

Type: **not specified**

## **Simulation of MNT experiments with INCREASE (GSI) and IGISOL (JYFL)**

*Wednesday, 3 July 2024 15:30 (30 minutes)*

**Presenter:** CONSTANTIN, Paul (ELI-NP/IFIN-HH Romania)

**Session Classification:** Session

Contribution ID: 46

Type: **not specified**

## Shell effect in multinucleon transfer reactions

*Wednesday, 3 July 2024 16:00 (20 minutes)*

**Presenter:** CHEN, penghui (yangzhou university)

**Session Classification:** Session

Contribution ID: 47

Type: **not specified**

## **Cluster transfer and cluster emission in massive transfer reactions**

*Wednesday, 3 July 2024 16:20 (20 minutes)*

**Presenter:** FENG, Zhaoqing (South China University of Technology)

**Session Classification:** Session

Contribution ID: 48

Type: **not specified**

## The N = 126 Factory

*Wednesday, 3 July 2024 17:05 (30 minutes)*

**Presenter:** BRODEUR, Maxime (University of Notre Dame)

**Session Classification:** Session



Contribution ID: 49

Type: **not specified**

## **Opportunities with the N = 126 Factory at Argonne National Laboratory**

*Wednesday, 3 July 2024 17:35 (20 minutes)*

**Presenter:** VALVERDE, Adrian (Argonne National Laboratory)

**Session Classification:** Session

Contribution ID: 50

Type: **not specified**

## **Status of the Commissioning of the N = 126 factory at ANL**

*Wednesday, 3 July 2024 17:55 (20 minutes)*

**Presenter:** SAVARD, Guy (Argonne National Laboratory / University of Chicago)

**Session Classification:** Session

Contribution ID: 51

Type: **not specified**

## **Prospects of MNT studies at $N = 126$ for r-process nucleosynthesis with the ISOLDE Superconducting Recoil Separator**

*Wednesday, 3 July 2024 18:15 (20 minutes)*

**Presenter:** KURTUKIAN NIETO, Teresa (IEM-CSIC Spain)

**Session Classification:** Session

Contribution ID: 52

Type: **not specified**

# **ISOLDE studies of the neutron-rich nuclides east of $^{208}\text{Pb}$**

*Thursday, 4 July 2024 09:10 (30 minutes)*

**Presenter:** ANDREYEV, Andrei (University of York)

**Session Classification:** Session

Contribution ID: 53

Type: **not specified**

## Shell model study of allowed and forbidden beta decay in the Pb region

*Thursday, 4 July 2024 09:40 (30 minutes)*

**Presenter:** SRIVASTAVA, Praveen (Department of Physics, Indian Institute of Technology-Roorkee, 247667, India)

**Session Classification:** Session

Contribution ID: 54

Type: **not specified**

## **The progress of in-gas-cell laser ionization spectroscopy of neutron-rich tungsten isotopes**

*Thursday, 4 July 2024 10:35 (25 minutes)*

**Presenter:** MUKAI, Momo (Nagoya University)

**Session Classification:** Session

Contribution ID: 55

Type: **not specified**

# **Configuration-Interaction Shell Model (CISM) Understanding of Medium and Heavy Mass Nuclei**

*Thursday, 4 July 2024 11:00 (20 minutes)*

**Presenter:** YUAN, Cenxi (Sun Yat-sen University)

**Session Classification:** Session

Contribution ID: 56

Type: **not specified**

## **Exploration on the effective nuclear force for the $N > 126$ nuclei**

*Thursday, 4 July 2024 11:20 (20 minutes)*

**Presenter:** LIU, Menglan (Sun Yat-sen University)

**Session Classification:** Session



Contribution ID: 57

Type: **not specified**

## **High-resolution resonance ionization spectroscopy at the S3-Low Energy Branch of the GANIL-SPIRAL2 facility**

*Thursday, 4 July 2024 13:10 (30 minutes)*

**Presenter:** FERRER-GARCIA, Rafael

**Session Classification:** Session

Contribution ID: 58

Type: **not specified**

# **Laser ionization of thorium via Rydeberg states in hypersonic gas jets**

*Thursday, 4 July 2024 13:40 (20 minutes)*

**Presenter:** CLAESSENS, Arno (KU Leuven)

**Session Classification:** Session

Contribution ID: 59

Type: **not specified**

## **Simulation-aided offline optimization of the JetRIS apparatus**

*Thursday, 4 July 2024 14:00 (20 minutes)*

**Presenter:** IVANDIKOV, Fedor (IKS, KU Leuven)

**Session Classification:** Session

Contribution ID: **60**

Type: **not specified**

## **Studies of K Isomers using Multi-nucleon Transfer REactions and Gammasphere**

*Thursday, 4 July 2024 14:20 (20 minutes)*

**Presenter:** KONDEV, Filip (Argonne National Laboratory)

**Session Classification:** Session

Contribution ID: 61

Type: **not specified**

## **Actinide experimental efforts for uncovering the origin of the heaviest elements**

*Thursday, 4 July 2024 15:05 (30 minutes)*

**Presenter:** MUMPOWER, Matthew (Los Alamos National Laboratory)

**Session Classification:** Session

Contribution ID: 62

Type: **not specified**

# Origin of the r-process elements in cosmic evolution and nuclear physics

*Thursday, 4 July 2024 15:35 (25 minutes)*

**Presenter:** Prof. KAJINO, Toshitaka (Beihang Univerdity / University of Tokyo / NAOJ)

**Session Classification:** Session

Contribution ID: 63

Type: **not specified**

## **Discovery of new ms-isomers in $^{213}\text{Tl}$ and $^{215}\text{Tl}$ at RIBF-RIKEN**

*Thursday, 4 July 2024 16:00 (20 minutes)*

**Presenter:** MORALES, Anabel (IFIC)

**Session Classification:** Session

Contribution ID: 64

Type: **not specified**

## **Study of neutron-rich Fm and transfermium nuclei with $^{254}\text{Es}$ target and MNT**

*Thursday, 4 July 2024 16:45 (30 minutes)*

**Presenter:** ASAI, Masato (Japan Atomic Energy Agency)

**Session Classification:** Session



Contribution ID: 65

Type: **not specified**

## **Systematic study of fission process in heavy and superheavy mass regions related to multinucleon transfer reactions**

*Thursday, 4 July 2024 17:15 (20 minutes)*

**Presenter:** ARITOMO, Yoshihiro (Kindai University)

**Session Classification:** Session

Contribution ID: 66

Type: **not specified**

## **208Pb fragmentation at BigRIPS vs MNT reactions to produce N ~ 126 nuclei**

*Friday, 5 July 2024 09:10 (30 minutes)*

**Presenter:** PODOLYAK, Zsolt (University of Surrey)

**Session Classification:** Session

Contribution ID: 67

Type: **not specified**

## **Production and discovery of high-Z neutron-rich isotopes at NSCL and FRIB**

*Friday, 5 July 2024 09:40 (30 minutes)*

**Presenter:** Dr TARASOV, Oleg (FRIB / MSU)

**Session Classification:** Session

Contribution ID: 68

Type: **not specified**

## **Photoinduced many proton knockout - a new method to access neutron rich nuclei?**

*Friday, 5 July 2024 10:35 (30 minutes)*

**Presenter:** WATTS, Dan (University of York)

**Session Classification:** Session

Contribution ID: 69

Type: **not specified**

## New paths for the study of heavy nuclei

*Friday, 5 July 2024 13:30 (20 minutes)*

**Presenter:** BEQUET, Jonathan (CEA/DRF/Irfu/DPhN)

**Session Classification:** Session

Contribution ID: 70

Type: **not specified**

## Exploring exotic nuclei via multinucleon transfer reactions using light neutron-rich beams

*Friday, 5 July 2024 13:50 (20 minutes)*

**Presenter:** SANETULLAEV, Alisher (New Uzbekistan University, Tashkent, Uzbekistan)

**Session Classification:** Session

Contribution ID: 71

Type: **not specified**

## **Coupled reaction channel description of single-nucleon transfer $^{40}\text{Ca} + ^{96}\text{Zr}$**

*Friday, 5 July 2024 14:10 (20 minutes)*

**Presenter:** GONIKA, Gonika (Inter-University Accelerator Centre, New Delhi)

**Session Classification:** Session

Contribution ID: 72

Type: **not specified**

## Study of transfer reactions in $^{28}\text{Si} + ^{140,142}\text{Ce}$

*Friday, 5 July 2024 14:30 (20 minutes)*

**Presenter:** KUMAR, Chandra (Inter-University Accelerator Centre (IUAC) New Delhi)

**Session Classification:** Session



Contribution ID: 73

Type: **not specified**

## NEWGAIN project

*Friday, 5 July 2024 15:15 (25 minutes)*

**Presenter:** STEFAN, Gheorghe Iulian (IPN Orsay)

**Session Classification:** Session

Contribution ID: 74

Type: **not specified**

## Highly selective and high-flux MR-ToF mass separation

*Friday, 5 July 2024 15:40 (20 minutes)*

**Presenter:** MAIER, Franziska (FRIB/MSU)

**Session Classification:** Session

Contribution ID: 75

Type: **not specified**

# The mrtof mass measurement project at BigRIPS

*Friday, 5 July 2024 16:00 (30 minutes)*

**Presenter:** ROSENBUSCH, Marco (RIKEN Nishina Center of Accelerator-Based Science)

**Session Classification:** Session

Contribution ID: 76

Type: **not specified**

## **Operation and Perspectives of the ZeroDegree Helium Gas Catcher at RIKEN**

*Friday, 5 July 2024 16:30 (25 minutes)*

**Presenter:** Mr YAP, Jinn Ming (The University of Hong Kong)

**Session Classification:** Session

Contribution ID: 77

Type: **not specified**

## Closing

*Friday, 5 July 2024 16:55 (5 minutes)*

**Session Classification:** Closing

Contribution ID: 78

Type: **not specified**

## **Separation of evaporation residues produced in MNT reactions using JAEA-Recoil Mass Separator**

*Tuesday, 2 July 2024 13:45 (30 minutes)*

**Presenter:** NISHIO, Katsuhisa (JAEA)

**Session Classification:** Session

Contribution ID: 79

Type: **not specified**

## **Status of the MNT program and its future plan at IMP**

*Friday, 5 July 2024 11:05 (30 minutes)*

**Presenter:** LIU, zhong (IMP,CAS)

**Session Classification:** Session

Contribution ID: **80**

Type: **not specified**

## **Ab initio calculations of heavy,m exotic nuclei for r-process nucleosynthesis**

*Friday, 5 July 2024 13:05 (25 minutes)*

**Presenter:** HOLT, Jason (TRIUMF)

**Session Classification:** Session