Dr Aye Thandar Htay,
Physics Department
Mandalay University, Myanmar
FOUNDED - 1925
AREA - 253.3316 Acres
STATUS - Government University
STRUCTURE - 18 Academic Departments
STUDY PROGRAM

48 Programs
- 6 Diploma Programs
- 15 Master Degree Programs
- 4 Multi-disciplinary Programs
- 8 Masters of Research
- 15 Doctor of Philosophy

NUMBER OF STUDENTS – 2450

ACADEMIC PERSONNEL – 398
Academic Departments

Arts Departments

1. Myanmar
2. English
3. History
4. Geography
5. Psychology
6. Philosophy
7. Oriental Studies
8. International Relations
9. Law
10. Economics
11. Archaeology
12. Anthropology
Science Departments

1. Chemistry
2. Physics
3. Mathematics
4. Zoology
5. Botany
6. Geology
Research Projects

- **Chemistry** - Natural Products, Organic Chemistry
- **Physics** – Strangeness Nuclear Physics, Material Science, Experimental Nuclear Physics, Electronics (Solar Energy, Sustainable Energy, Wireless Communication and Data Transmission)
- **Zoology** - Aquaculture, Biodiversity
- **Botany** - Biofertilizer, Microbiology
- **Geology** – Gemology, Primate Studies
- **Geography** - Environmental Science
Mandalay University
Department of Physics
Department of Physics Research Groups/Labs

- Theoretical Nuclear Physics Lab
- Experimental Nuclear Physics Lab
- Electronics Lab
- Materials Research Lab
Theoretical Nuclear Physics

• Study on Few Body System
  – Structure Analysis
    • Study on bound state and resonance state problem of nuclei and hypnuclear nuclei with variational and complex rotation methods.
  – Production Reaction
    • Hypernuclear $(\Lambda,\Sigma)$ production with Green's Function Method

$\Sigma$ hypernuclear Production Spectrum with Coupled Channel 3N-Y Potential
Theoretical Nuclear Physics

- Study on Many-Body System
  - Relativistic Mean Field Theory (RMF)
  - Neutron Rich Hypernuclei
  - Bruckner Hartree-Fock (BHF)

There are 30 members in TNP group but all are in different universities of upper Myanmar

- 14 PhD students,
- 20 Master Students.
Research Collaboration (TNP Lab)

Now, School of Physics, SUT, Thailand

- KEK, Japan
- RIKEN, Tokyo, Japan
- Institute of Kernphysik (IKP), Forschung Zentrum Julich (FZJ), Germany
- Gifu University, Japan

Coupled Channel T-Matrix Calculation in Baryon-Baryon Interaction by using Nijmgen Soft Core 97f potential in momentum Space

- Gifu University, Japan

At present, two Master students study at Gifu University for PhD and a post doc student too.
Seminar of Prof Y. Akaishi from KEK

Key note speech of Prof T. Yamazarki from RIKEN

Seminar of Prof Nakazawa, Gifu University
1 | Nanomaterials

Development of metal (Au, Ag and Cu) nanoparticles by chemical reduction and vacuum evaporation

2 | Carbon NanoTubes (CNT)

Development of carbon nanotubes by chemical vapor deposition (collaboration with DSSTRC)

3 | Metal oxides

Fabrication of sol-gel derived metal oxides (TiO2, ZnO, NiO etc.)

4 | Natural Dyes

Natural dyes extraction from local fruits and leaves
Research Collaboration (Materials Research Lab)

Universities’ Research Centre (URC), Yangon University

Energy Research Institute @ NTU, Nanyang Technological University, Singapore

School of Materials & Mineral Resource Engineering, Universiti Sains Malaysia
Mandalay University Research Centre (MURC)

- Physics
- Chemistry
- Geology
- Botany
- Zoology
- Geography

Integrated multidisciplinary research labs
Research Areas (Experimental Nuclear Physics Lab)

**Environmental Sampling**

Radioactivity and Elemental Analysis of Environmental Samples

**Current Research**

1. Investigation of Radionuclides and Heavy Metals in Sediment of Ancient Lakes in Upper Myanmar
2. Study on the Environmental Impact of Phosphate Fertilizer
4. Radioactivity Concentrations in Soil and Transfer Factors of Radionuclide from Soil to Medical Plants in the Herbal Gardens in Myanmar
5. Assessment of Natural Radioactivity and Radiation Hazards of commonly used Building Materials
Research Facilities

- High Purity Germanium (HP Ge) detector system
- Energy Dispersive X-Ray Fluorescence (EDXRF) Spectrometer
- NaI(Tl) Scintillation Detector
- GM Counter
- Gamma Scout
5 PhD students and 8 Master Students. 1 PhD student studied at Pavia University, Italy supported by Erasmus Mundus Program
| Microcontroller-based Control System |

Boost and bulk Control of current, voltage and temperature for home appliances;
Solar Energy, Sustainable Energy, Wireless Communication and Data Transmission
Future Plan

- To Collaborate with Theoretical Particle Physics Group of SUT in the future

- To enhance the student exchange, faculties exchange and to participate/organize Workshop, Conference together between us.

Thank You for all Your Hospitality!!