

# **Stepping Forward for the Future Generation: Creation of Research Network on Environmental Health Effects**

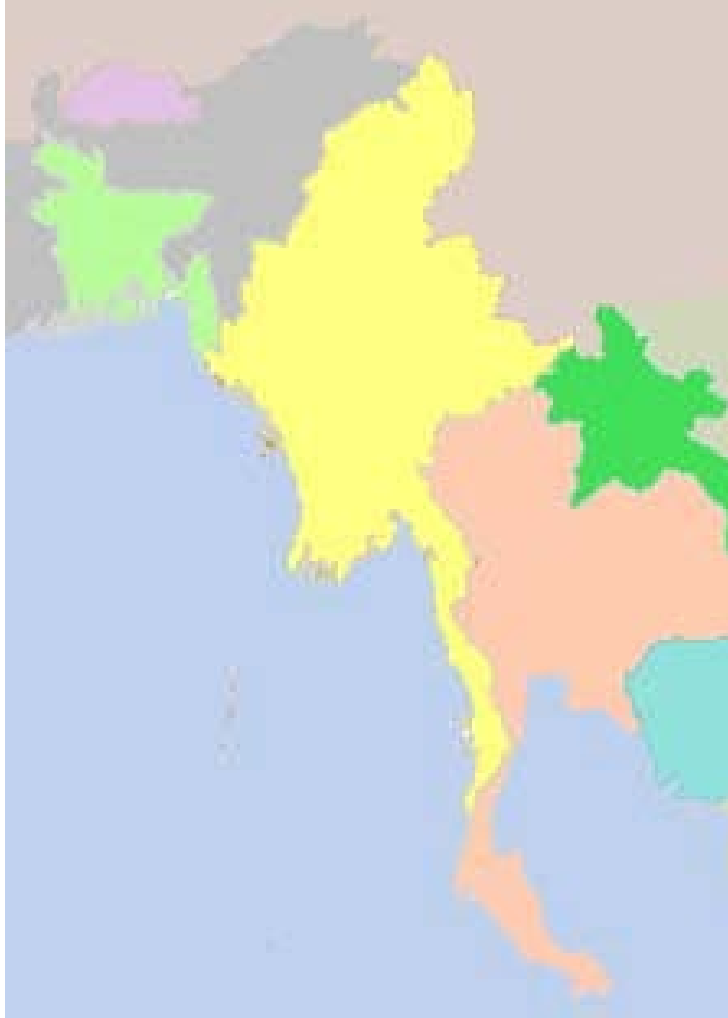
Dr Zaw Wai Soe  
Rector  
University of Medicine 1, Yangon  
Myanmar

# Thank you so much

- Professor Chiho Watanabe President, NIES
- Professor Yichi Moriguchi Vice-President
- Professor Akimasa Sumi Emeritus Professor, The University of Tokyo
- Professor Shinichiro Ogaki Emeritus Professor, The University of Tokyo
- Mr Naoya Tsukamoto Director, Regional Resource Center for Asia and Pacific, Asian Institute of Technology, Thailand
  
- Profesora Dr Tin Tin Win Shwe



**Myanmar  
is the largest country  
in mainland  
South-East Asia**



**14 States and Regions  
67 Districts  
330 Townships  
64 Sub-townships  
2891 Wards  
13698 Village tracts  
64817 Villages**

Shwedagon Pagoda



Population 54.13 millions

Growth Rate 1.2

70.4% in Rural Areas

135 National groups

100 Languages

90 % Buddhists

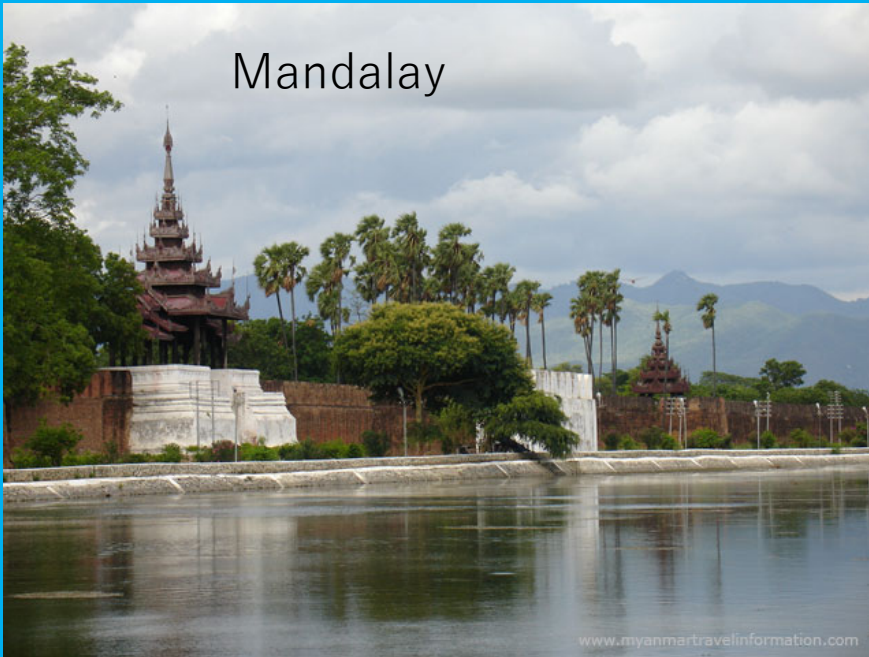
0-14 32%

15-59 59%

60->60 9%

93M/100F

Mandalay



Adult literacy rate 94.1%

IMR(R) 27.8

IMR(U) 25.6

MMR(R) 1.54

MMR(U) 1.12

Inlay Lake



### Life Expectancy

Urban Male 65.8

Female 70.8

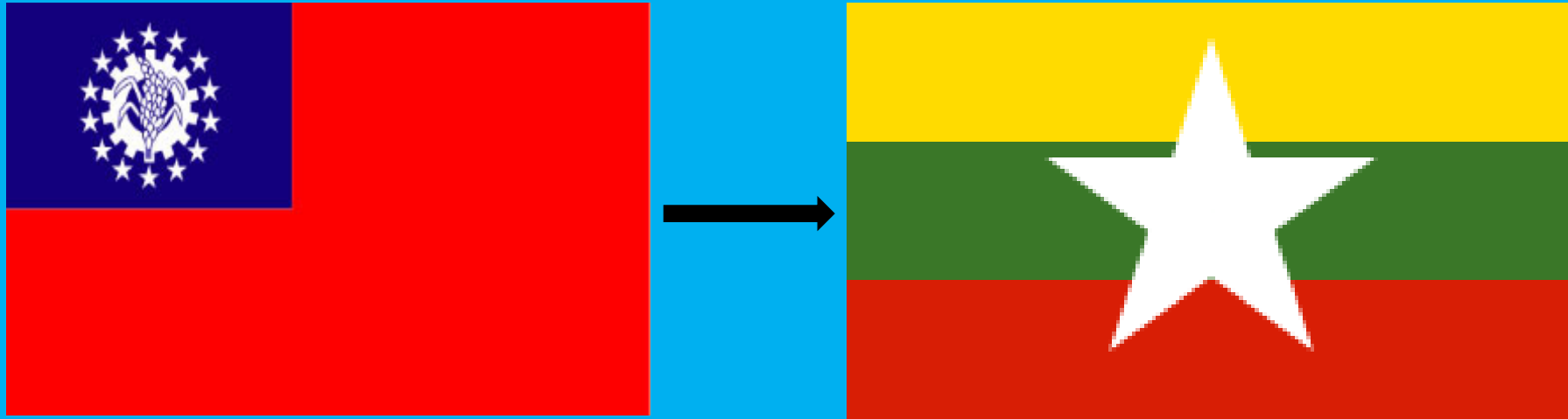
Rural Male 64.3

Female 67.8



- wide geographic, ethnic and socio-economic disparities
- 135 tribes and 111 dialects





**2011 - 2012  
Changes in Myanmar**

**The doors of Myanmar were beginning to open.**

Not enough attention over the decades

- Weak health infrastructure,
- Insufficient number of adequately skilled human resources, and
- High out-of-pocket spending,
- Questionable quality of health care services



Expecting to be

a Healthy, Wealthy, Prosperous Country

Myanmar Sustainable Development Plan

2018 - 2030

# Myanmar Sustainable Development Plan

## Goal 1:

Peace, National Reconciliation, Security & Good Governance

## Goal 2:

Economic Stability & Strengthened Macroeconomic Management

## Goal 3:

Job Creation & Private Sector Led Growth

## Goal 4:

Human Resources & Social Development for a 21st Century Society

## Goal 5:

Natural Resources & the Environment for Posterity of the Nation

# Reform in Myanmar

- Political Reform
- Social Reform
- Education Reform
  - NEPC
- Higher Education Reform
  - Rectors' Committee
- Medical Education Reform
  - BME Outcome Based Integrated Curriculum**
  - PME Competency Based Training- Work Place Based Assessment**
  - CPD**



@toemyatnaing

သိလ  
MORALITY

# One of our missions

- To provide the means and the intellectual environment which enhance in Medical Research
- 3500 Undergraduates and 1000 Postgraduates
- Internationalization
- Research and Innovation



# Medical Skills, Simulation and Research Center Opening on



# Why Medical Skill, Simulation & Research Centre?

- For Patient Safety
- As a training centre for Medical Personals
- To become a World-Class Medical Education Institution
- To produce Ethically Minded, Professionally Committed and Technically Competent Graduates
- To provide the high level research environment for Medical Universities



## Collaboration between NIES and UM1, Yangon



# Start from 2012

## Training course (2012?)



Dr. Ohnmar Myint Thein  
Dr. Thin Thin Soe

## Exchange program (2013)



Dr. Zarli Thant  
Dr. Nang Thin Thin Htike

Aung Myo Hein  
Inzali Moe Moe Kyaw

2013

*Experts Workshop  
(from Japan, Bangladesh, Myanmar)*

*~Seeking ways to reduce  
the arsenic health hazards from the toxicological point of view ~*

Prof. Sumi

Prof. Myat Thandar

Dr. TTWS



Prof. Chiho  
Watanabe

# 2016

## LOA Signing ceremony

**Prof. Zaw Wai Soe**

**Prof. A Sumi**



**University of Medicine (1), Yangon, Myanmar**



# Study Tour & Skill transfer (2016)

2016/6/24



**Dr. Cho Cho Aung**  
Lecturer  
Dept. of Physiology  
University of Medicine (1), Yangon  
MYANMAR



**Dr. Nyein Nyein Aye**  
Assistant Lecturer  
Dept. of Physiology  
University of Medicine (2), Yangon  
MYANMAR

2016/10/14



**Dr. Zaw Lin Thein**  
Associate Professor  
Dept. of Physiology  
University of Medicine (1)  
Yangon  
MYANMAR

2017/3/6~ 2017/3/25



**Dr. Nay Chi Nway**  
Assistant Lecturer  
Ph. D candidate  
Dept. of Physiology  
University of Medicine (1)  
Yangon  
MYANMAR

# Lunch Time Talk (UM1, Yangon)

2017/1/10



## LUNCH TIME TALK

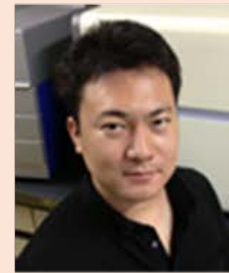
~ Skill Transfer Program ~

(Organized by Prof. Ohnmar, UM (1), Myanmar and  
Dr. Tin Tin Win Shwe, NIES, Japan)



University of Medicine (1), Yangon, Lanmadaw Campus, Meeting room,  
Myanmar  
January 10, 2017  
11:30 am ~ 12:30 pm

- (1) **Dr. Fumitaka KAWAKAMI**  
(Graduate School of Medical  
Sciences, Kitasato University, Japan)  
*“The role of protein kinase in  
neurodegenerative disease.”*



- (1) **Dr. Takehiro SUZUKI**  
(National Institute for Environmental  
Studies, Tsukuba, Japan)  
*“Measurement of DNA methylation  
level using a pyrosequencer”*

# Discussion for Future Collaboration between Saitama University, NIES and UM1 (March 2018)



## Training Workshop 2018

~ *Learning ways of Western blot analysis* ~  
(Sponsored by Saitama University, JAPAN)



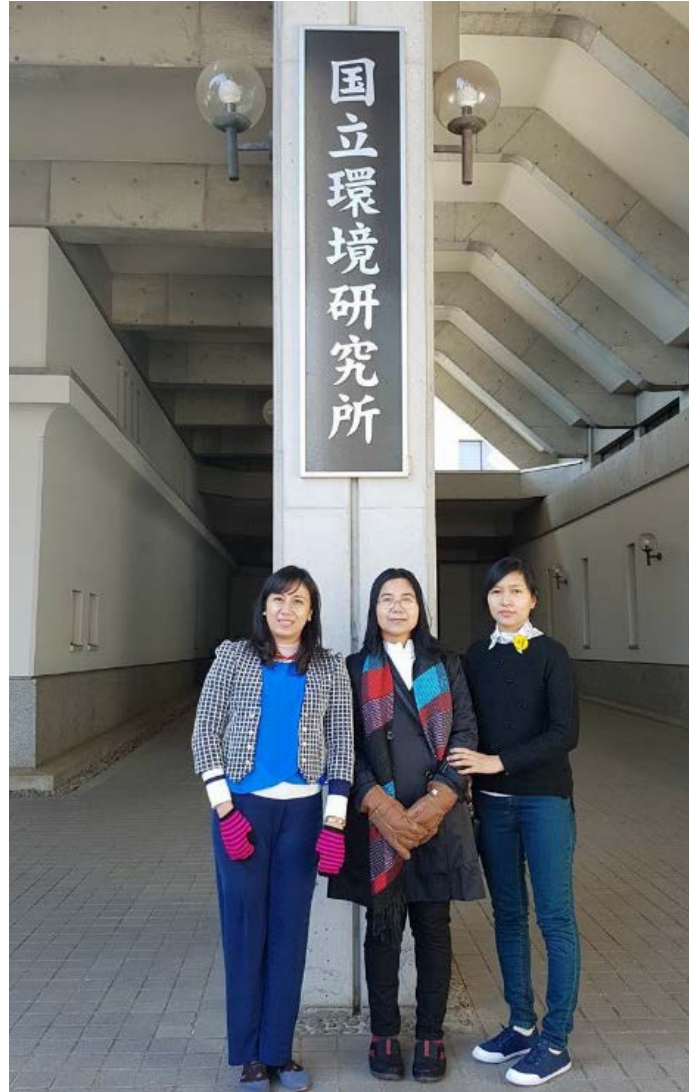
University of Medicine (1), Yangon, Pyay Campus, Myanmar  
December 27~29, 2018

### *Organizing Committee*

- Dr. Ohnmar (Professor and Head, University of Medicine 1, Yangon([dr.ohnma@gmail.com](mailto:dr.ohnma@gmail.com)))
- Dr. Tin Tin Win Shwe (Senior Researcher, National Institute for Environmental Studies, and Cooperative Professor of University of Tsukuba, Japan) ([tin.tin.win.shwe@nies.go.jp](mailto:tin.tin.win.shwe@nies.go.jp))
- Dr. Ichiro Sakata (Associate Professor, Saitama University) ([isakata@mail.saitama-u.ac.jp](mailto:isakata@mail.saitama-u.ac.jp))
- Dr. Zaw Lin Thein (Associate Professor, University of Medicine 1, Yangon)

# Study Tour & Skill transfer (2018)

2018/1/29~2018/2/10



## **Dr. Ei Ei Khin**

Associate Professor  
Dept. of Physiology  
University of Medicine (2), Yangon  
MYANMAR

## **Dr. Win Yu Aung**

Lecturer  
Dept. of Physiology  
University of Medicine (1), Yangon  
MYANMAR

## **Dr. Thu Thu Maung Maung Nyunt**

Lecturer  
Dept. of Biochemistry  
University of Medicine (2), Yangon  
MYANMAR

# Collaborative research

**UM1: Air pollution and Health Risk**

**2017 April to 2018 March**



Particle counter  
OPS 3330



Handy particle  
counter 8303

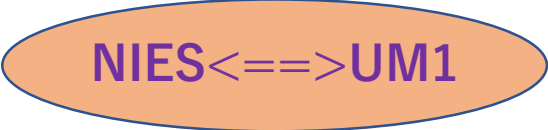


Pocket  
PM2.5 Sensor

Pocket PM2.5  
sensor



# Collaborative research (1): Monitoring of air quality



## Monitoring the air quality in Yangon, Myanmar (First time: Rainy season 2017 May), using Particle counter 8303

Inside Primary school



In front of Primary school  
(near road)



Inside Pharmacy store



In front of Pharmacy store  
(near road)



Inside UM1



In front of UM1  
(near road)



Results: PM<sub>10</sub> concentration(μg/m<sup>3</sup>)

data	site	time	total(ug/m3)	N	E
test_002	作動テスト サミットパークビューホテル523室内 (Summit Park View Hotel (In Room))			16.7932544	96.142874
test_003	作動テスト サミットパークビューホテル523室内 (Summit Park View Hotel (In Room))			16.7932544	96.142874
test_004	サミットパークビューホテル ロビー (Summit Park View Hotel (Lobby))			16.7932544	96.142874
test_005	家具工場内 (Furniture factory)	13:30		16.7954944	96.1765952
test_006	家具工場内 (Furniture factory)	13:31	320	16.7954944	96.1765952
test_007	家具工場前、道路わき (Roadside in front of furniturefactory)	13:33	201.1	16.7954944	96.1765952
test_008	家具工場前、道路わき (Road in front of furniturefactory)	13:35	140	16.7954944	96.1765952
test_009	UM1 実験室内 (UM1, experimentalroom)		60.17	16.8196736	96.1341376
test_010	UM1 実験室内 (UM1, experimentalroom)	14:42	50.98	16.8196736	96.1341376
test_011	UM1前 道路わき (Roadside in front of UM1)	15:12	70.4	16.819317	96.1326333
test_012	UM1前 道路わき (Roadside in front of UM1)		92.12	16.819317	96.1326333
test_013	UM1前 道路わき (Roadside in front of UM1)	15:18	90.38	16.819317	96.1326333
test_014	UM1 中庭 (UM1 courtyard)		44.5	16.819167	96.1325
test_015	薬局前 道路わき (Roadside in front of Medicine shop)		60.58	16.837845	96.1276433
test_016	薬局前 道路わき (Roadside in front of Medicine shop)		76.38	16.837845	96.1276433
test_017	薬局店内 (Inside medicine shop)		147	16.8375	96.1275
test_018	薬局店内 (Inside medicine shop)		163.2	16.8375	96.1275
test_019	小学校校長室 (Primary school Headmistress room)	16:47	31.66	16.852778	96.115
test_020	小学校教室 (Primary school class room)	16:50	35.86	16.852778	96.115
test_021	小学校前 道路わき (Road side in front of Primary school while passing vehicles)	16:54	460.6	16.852778	96.115
test_022	小学校前 道路わき (Road side in front of Primary school)	16:55	50.6	16.852778	96.115
test_023	小学校前 道路わき (Road side in front of Primary school)	16:56	56.29	16.852778	96.115
test_024	小学校 もう一度教室 (Primary school class room)	16:57	48.28	16.852778	96.115
test_025	紙工場内 蒸気付近 (Paper factory near steam)	17:50	74.89	16.839444	96.079167
test_026	紙工場内 蒸気付近 (Paper factory near steam)	17:51	52.14	16.839444	96.079167
test_027	紙工場内 装置そば (Paper factory near machine)	17:53	118.6	16.837118	96.07931
test_028	紙工場内 装置そば (Paper factory near machine)	17:54	138.6	16.837118	96.07931
test_029	紙工場内 製品積み込み付近 (Paper factory near raw materials)	17:57	100.3	16.836944	96.079167
test_030	紙工場内 製品積み込み付近 (Paper factory near raw materials)	17:58	124.6	16.836944	96.079167

data fileの時刻は日本時間。現地時間は-2.5時間すること。

# 46th Myanmar Health Research Congress (Jan 8~12, 2018)

## Department of Medical Research, Yangon, Myanmar

NIES President  
Dr. Chiho Watanabe



Dr. Shoji Nakayama



Chairpersons, Speakers, Organizers



NIES team



### 46<sup>th</sup> MYANMAR HEALTH RESEARCH CONGRESS



Environment and Future Generation  
[Save Environment, Save Our Children]



## Symposium

#### Chairpersons :

- (1) Prof. Khin Maung Lwin, Director (Retired) Occupational Health, (Adviser) Public Health Domain, Ministry of Health and Sports
- (2) Dr. Chiho Watanabe, President, National Institute for Environmental Studies (NIES), Japan

#### Speakers :

- (1) Dr. Chiho Watanabe, President, National Institute for Environmental Studies NIES, Japan
- (2) Dr. Cho Cho Win, Associate Professor, Department of Paediatrics, University of Medicine 2
- (3) Shoji F. Nakayama, MD, PhD, Head, Exposure Dynamics Research Section, Head, Office of Research and Development, J ECS Programme Office, Centre for Health and Environmental Risk Research National Institute for Environmental Studies (NIES), Japan
- (4) Dr Win Lae Htut, Assistant Director, School Health Division, Department of Public Health

9<sup>th</sup> January, 2018 (Tuesday)

Auditorium (2),  
Advanced Molecular Research Centre,  
Department of Medical Research

## Preliminary monitoring of concentration of particulate matter (PM<sub>2.5</sub>) in Yangon City, Myanmar

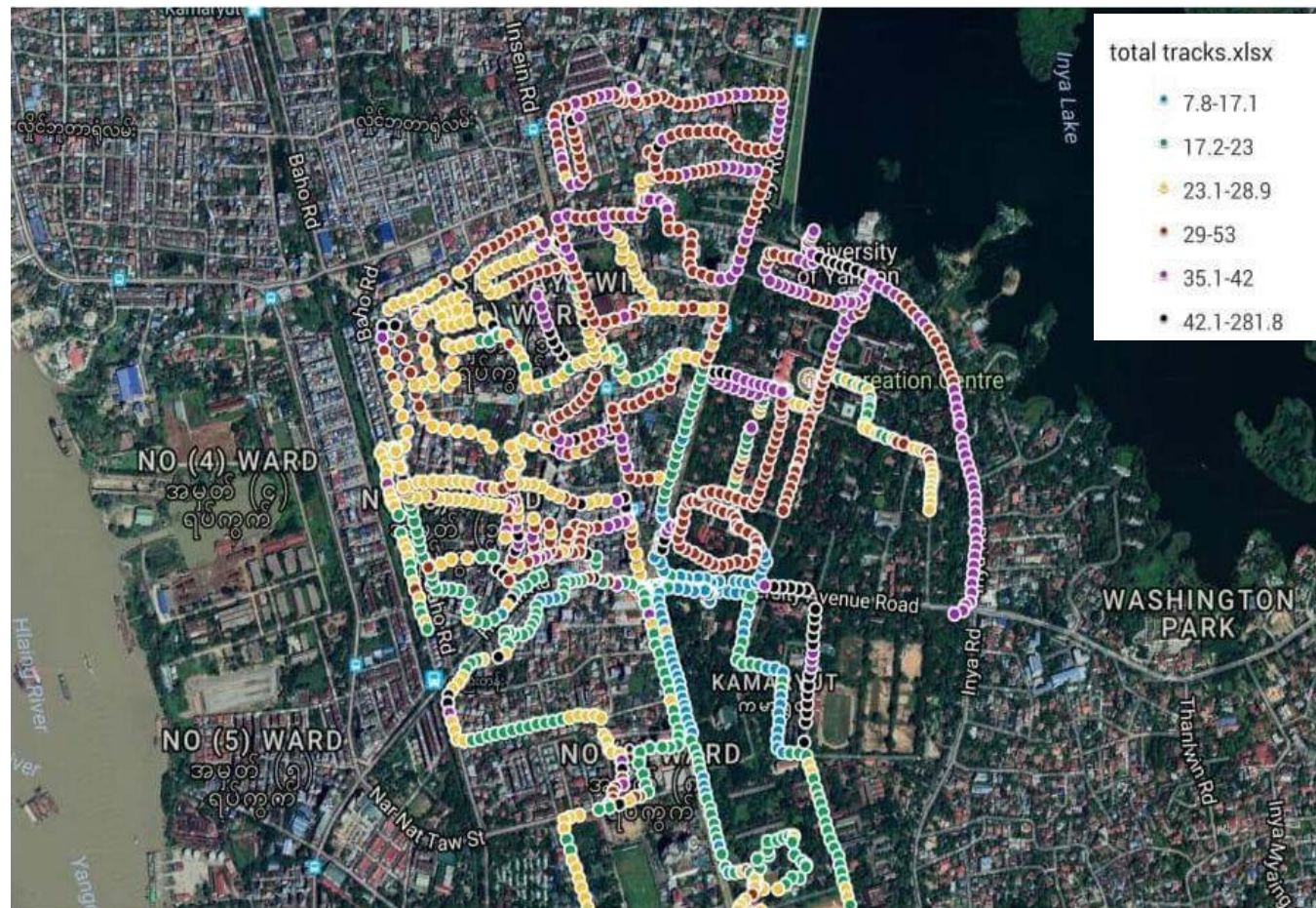
Pocket PM<sub>2.5</sub> sensor



Yaguchi Electric Co., Ltd., Miyagi, Japan



Team members

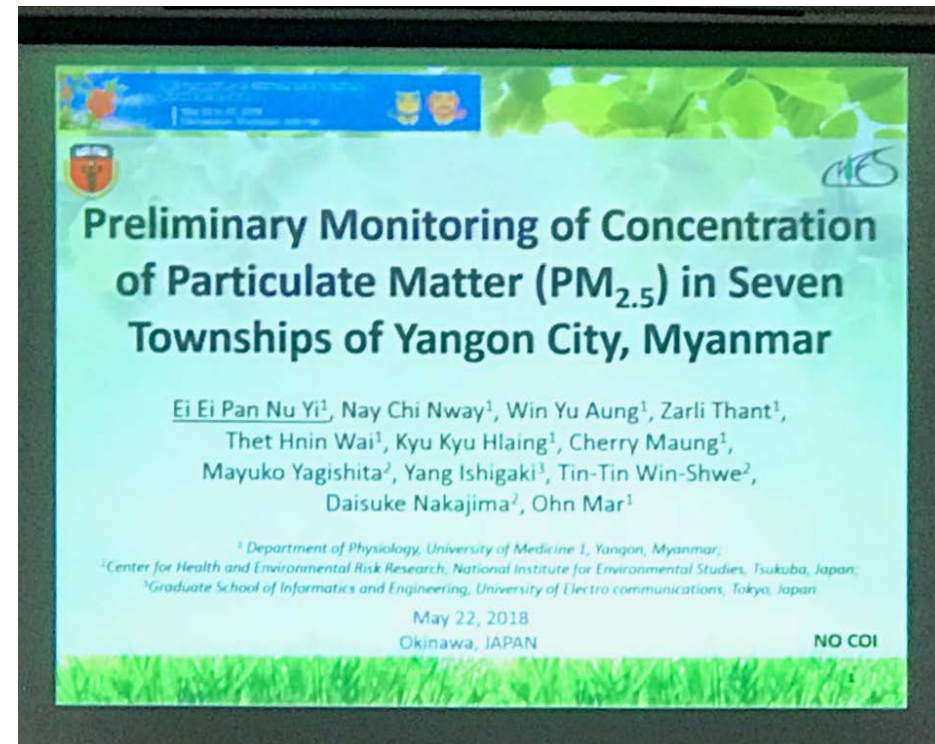


Representative mapping of PM<sub>2.5</sub> concentration in Kamayut Township, Yangon

# 27th Symposium on Japan Environmental Chemistry (Okinawa, May 22, 2018)



Dr. Ei Ei Pan Nu Yi (UM1)





Dr. Ei Ei Pan Nu Yi (UM1)

## Preliminary monitoring of concentration of particulate matter (PM<sub>2.5</sub>) in seven Townships of Yangon City, Myanmar

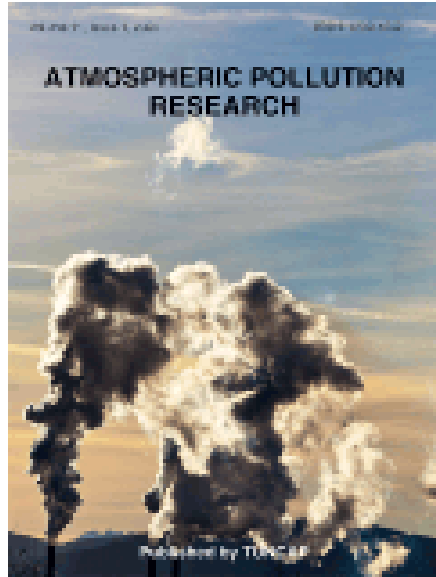
Ei Ei Pan Nu Yi<sup>1</sup>, Nay Chi Nway<sup>1</sup>, Win Yu Aung<sup>1</sup>, Zarli Thant<sup>1</sup>,  
Thet Hnin Wai<sup>1</sup>, Kyu Kyu Hlaing<sup>1</sup>, Cherry Maung<sup>1</sup>, Mayuko Yagishita<sup>2</sup>,  
Yang Ishigaki<sup>3</sup>, Tin-Tin Win-Shwe<sup>2</sup>, Daisuke Nakajima<sup>2</sup>, Ohn Mar<sup>1</sup>

<sup>1</sup> Department of Physiology, University of Medicine 1, Yangon, Myanmar; <sup>2</sup> Center for Health and Environmental Risk Research, National Institute for Environmental Studies, Tsukuba, Japan; <sup>3</sup> Graduate School of Informatics and Engineering, University of Electro-communications, Tokyo, Japan





# Air quality in Yangon city, Myanmar



Quiet area, away from heavy traffic



Crowded area, closed to heavy traffic



## Preliminary assessment of ambient air quality in Yangon city, Myanmar

Win-Yu Aung<sup>1</sup>, Mayumi Noguchi<sup>2</sup>, Ei-Ei Pan-Nu-Yi<sup>1</sup>, Zarli Thant<sup>1</sup>, Shigehisa Uchiyama<sup>2</sup>, Tin-Tin Win-Shwe<sup>3</sup>, Naoki Kunugita<sup>2</sup>, Ohn-Mar<sup>1</sup>, \*

<sup>1</sup>Department of Physiology, University of Medicine 1, Pyay Campus, Kamayut Township, 11014, Yangon, Myanmar; <sup>2</sup>Department of Environmental Health, National Institute of 5 Public Health, 2-3-6 Minami, Wako-shi, Saitama 351-0197, Japan; <sup>3</sup>Health Effect Assessment Section, Center for Health and Environmental Risk Research, National Institute 7 for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Win Yu Aung *et al.*, *Atmospheric Pollution Research*, 10 (3), 2019, 722-730

# Study Tour (2018 June 7)

Professor Myo Thaik Oo  
M. D., Ph. D (Tsukuba University)  
Department of Forensic Medicine  
**UM (1)**, Yangon, Myanmar



Health Effect Assessment Section







# NIES International Seminar



Title : “Role of promoter hypermethylation in malignancy”

Speaker : Professor Myint Myint Nyein (M.B., B.S, M. Med. Sc, Ph. D)

Professor /Head

Department of Pathology

University of Medicine 1, Yangon, MYANMAR


Date : 2018, September 20 (Thursday) 9 : 00—10 : 00

Place : Chemical and Health Seminar Room (Main Research Building A, 2nd floor)



# 47th Myanmar Health Research Congress (January 7~11, 2019)

## Department of Medical Research, Yangon, Myanmar



47<sup>th</sup> MYANMAR HEALTH RESEARCH CONGRESS

Environment and Health  
~ Clean Environment, Better Health ~

UM1 NIES

**Chairpersons**

1. **Dr. Than Htut**, Director (Retired), Department of Occupational and Environmental Health, University of Public Health, Myanmar
2. **Dr. Keiko Nohara**, Former Director, Center for Health and Environmental Risk Research, National Institute for Environmental Studies (NIES), Japan

**Speakers**

1. **Dr. Tin Tin Win Shwe**, Senior Researcher, Center for Health and Environmental Risk Research, National Institute for Environmental Studies (NIES), Japan
2. **Dr. Zaw Lin Thein**, Associate Professor, Department of Physiology, University of Medicine 1, Yangon, Myanmar
3. **Dr. Go Suzuki**, Senior Researcher, Center for Material Cycles and Waste Management Research National Institute for Environmental Studies (NIES), Japan
4. **Professor Ohn Mar**, Department of Physiology, University of Medicine 1, Yangon, Myanmar

7<sup>th</sup> January, 2019 (Monday) Auditorium (2)  
Advanced Molecular Research Center  
Department of Medical Research





## Training Workshop 2019

~ *Learning ways of RNA Extraction from Blood*

(Sponsored by NIES, JAPAN)

January 9, 2019

University of Medicine 1, Lanmadaw Campus

### Organizers

- Professor Ohnmar (UM1)
- Dr. Tin Tin Win Shwe(NIES)
- Dr. Takehiro Suzuki (NIES)
- Dr. Zaw Lin Thein (UM1)

Demonstration by (1) Takehiro Suzuki (NIES, JAPAN)

(2) Tin Tin Win Shwe (NIES, JAPAN)

(January 9, 2019)



# 28th Symposium on Japan Environmental Chemistry (Saitama, June, 2019)



Dr. Muyar Win Thu (UM1)

# Society of Indoor Environment Japan (Okinawa, December, 2019)

## Best Poster Award (2019)

DNA methylation changes in cord blood of pregnant woman in the area of high PM<sub>2.5</sub> concentration in Myanmar

### 表彰状

優秀ポスター賞

ミャンマーのPM<sub>2.5</sub>高濃度地区における妊婦臍帯血ゲノムDNAのOXTRメチル化変化

鈴木武博、Tin-Tin Win-Shwe、中島大介、野原 恵子 (国立環境研究所)

Nay Chi Nway、

Ohn Mar (ヤンゴン第一医科大学)

石垣 陽 (電気通信大学)

講演者

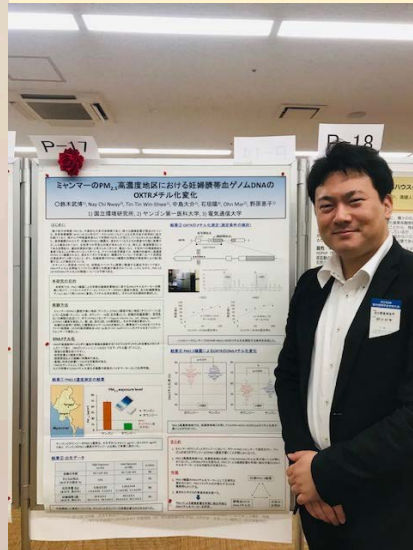
鈴木 武博 (国立環境研究所)

あなたの 2019 年室内環境学会学術大会ポスターセッションでの発表は、選考の結果、研究成果及び発表技法が優れていると認められました。よって、これを讃え今後のあなたの研究が益々進展することを祈念し、賞します。

2019年12月5日

2019年室内環境学会学術大会

大会長 三宅 裕



2019年室内環境学会学術大会

## Pilot study of personal exposure assessment of PM<sub>2.5</sub> using Pocket PM<sub>2.5</sub> Sensor [Pro]

ポケットPM<sub>2.5</sub>センサー[Pro]を用いたPM<sub>2.5</sub>の個人曝露評価のパイロット研究

Tin Tin WIN-SHWE<sup>1</sup>, Zaw Lin THEIN<sup>2</sup>, Win Yu AUNG<sup>2</sup>, Ei Ei Pan Nu YI<sup>2</sup>, Cherry MAUNG<sup>2</sup>, Nay Chi NWAY<sup>2</sup>, Zarli THANT<sup>2</sup>, Takehiro SUZUKI<sup>1</sup>, Ohn MAR<sup>2</sup>, Yang ISHIGAKI<sup>3</sup>, Daisuke NAKAJIMA<sup>1</sup>

<sup>1</sup> National Institute for Environmental Studies, Japan

<sup>2</sup> University of Medicine 1, Yangon, Myanmar

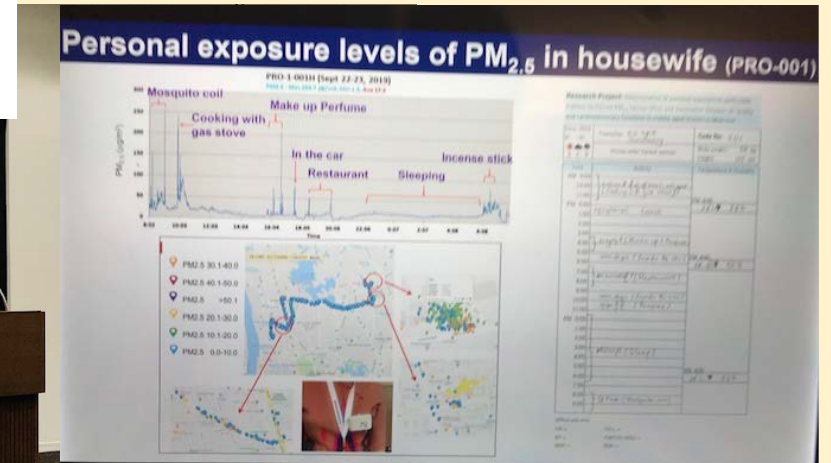
<sup>3</sup> The University of Electro-communication, Japan



No conflict of interest



← Pocket PM<sub>2.5</sub> Sensor [Pro]: No need Smart phone



**Thank you very much for your support to Myanmar**



**Thank you for your kind attention**