SYNCHROTRON THAILAND CENTRAL LAB

ICRI - 4th International Conference on Research Infrastructures
Vienna, Austria

# Sarawut Sujitjorn

Synchrotron Light Research Institute
Thailand

on Prospective of Thailand

# Synchrotron Facility

- Past
- Present
- Future

how do Thailand achieve (moving toward) the common goals

## The two common goals :

1. to promote and ensure scientific excellence
2. to fully maximize the public ROI

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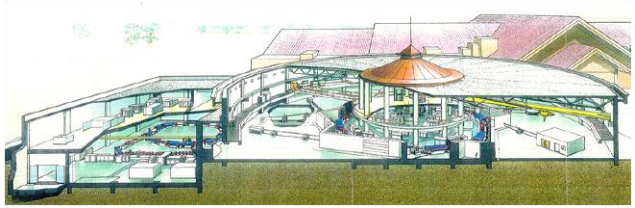
# Our synchrotron began 20 years ago by Japan's donation.



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# Beamlines

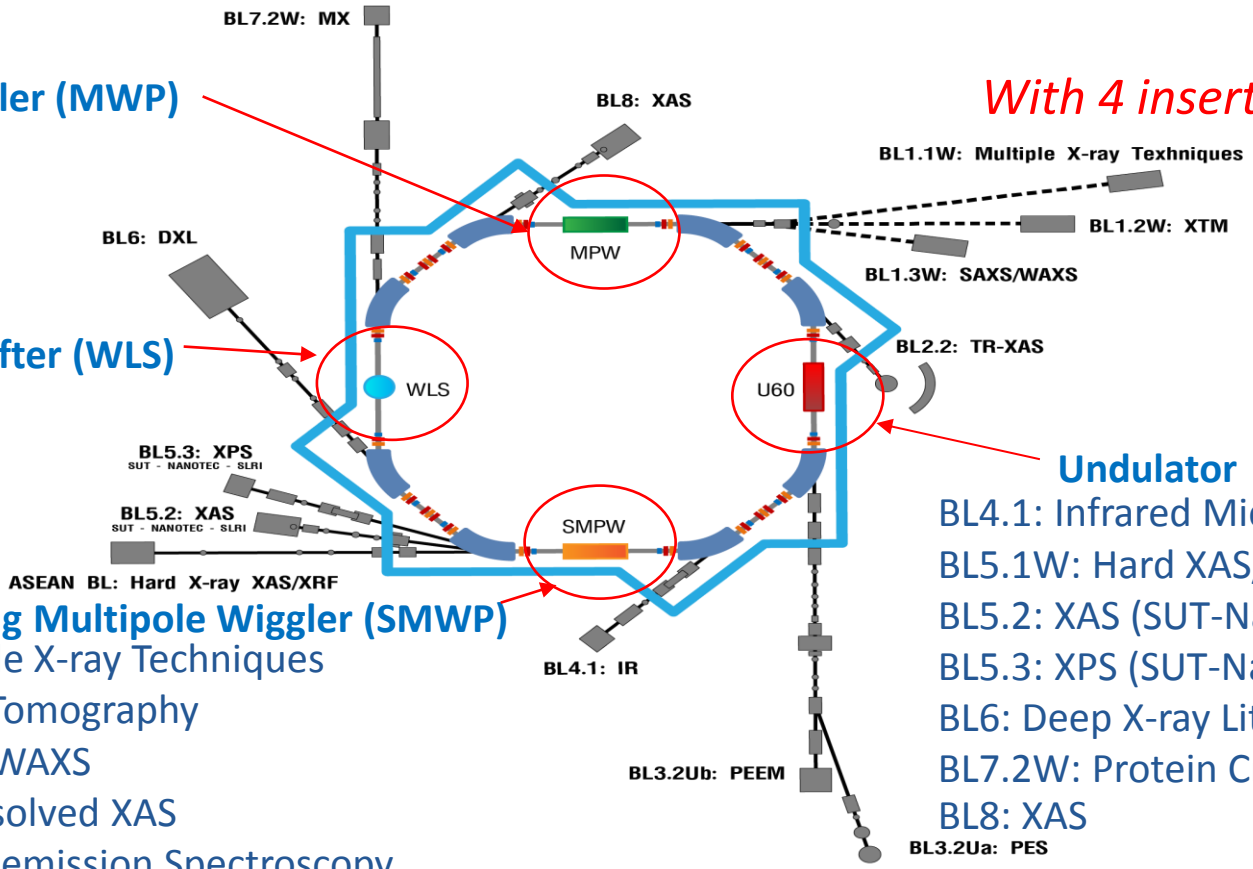
Facilities @ SLRI

*With 4 insertion devices !*

**Multipole Wiggler (MWP)**

**Wavelength shifter (WLS)**

**Superconducting Multipole Wiggler (SMWP)**




**Undulator**

BL4.1: Infrared Microspectroscopy
BL5.1W: Hard XAS/XRF
BL5.2: XAS (SUT-Nanotec-SLRI)
BL5.3: XPS (SUT-Nanotec-SLRI)
BL6: Deep X-ray Lithography
BL7.2W: Protein Crystallography
BL8: XAS

BL1.1W:Multiple X-ray Techniques
BL1.2W: X-ray Tomography
BL1.3W: SAXS/WAXS
BL2.2: Time Resolved XAS
BL3.2Ua: Photoemission Spectroscopy
BL3.2Ub: Photoelectron Emission Microscopy

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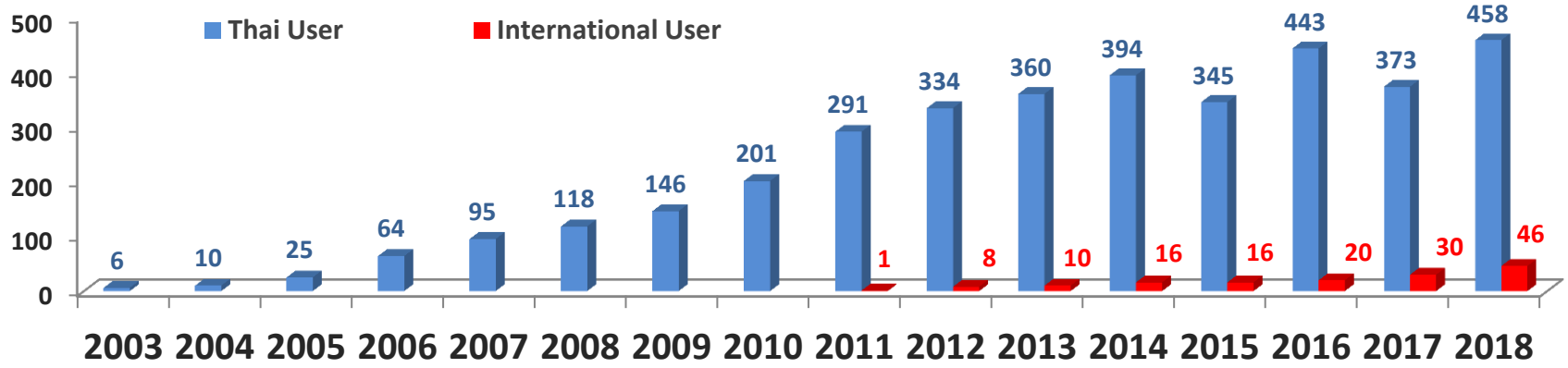


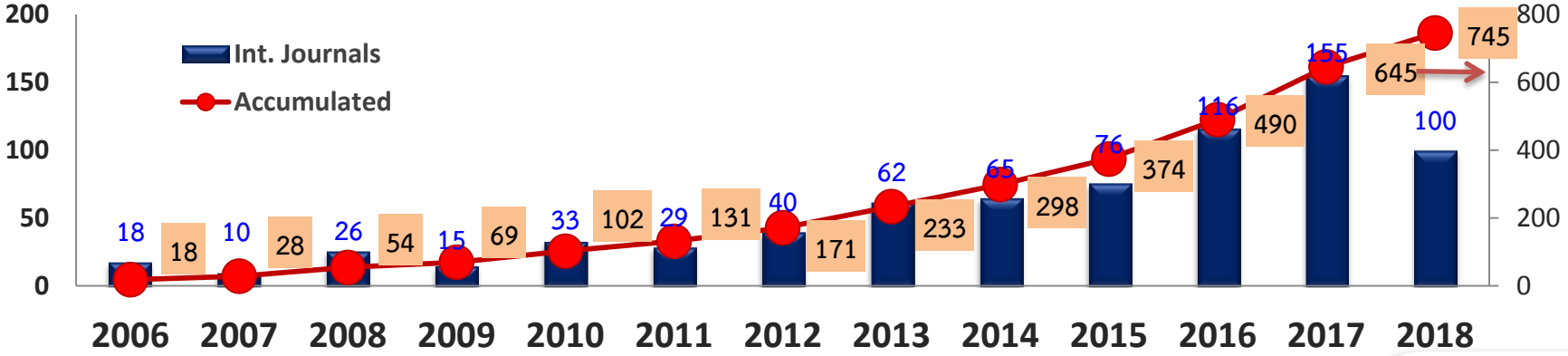


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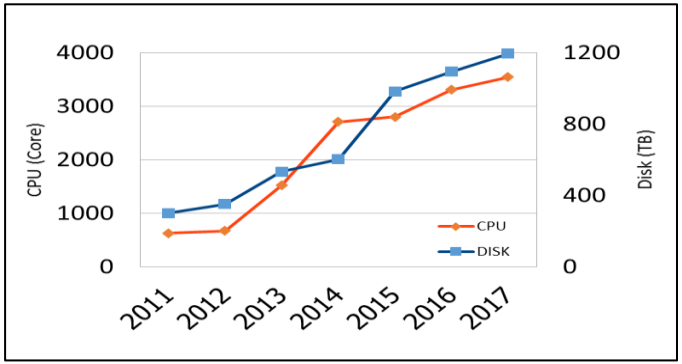
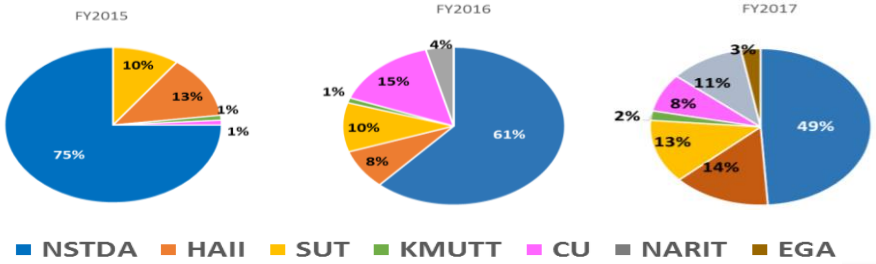
# Fostering new generation of scientists and engineers

National e-Science Infrastructure Consortium

**Actual demand of resources**




Computing load distribution

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# 1. Summer Schools@CERN: UG&PG Students/Secondary School Students andTeachers

# 2. Summer School@DESY Germany: UG Students

# Some DESY's Alumni

Dr. Rossukon Thongwichian
Ph.D., Free University of Berlin, Germany
Current Position: Assistant Head of the Department for International Affairs, TU

Dr. Pannee Leeladee
Ph.D., Johns Hopkins University, USA
Current Position: Lecturer, CU

Dr. Nirawat Thammajak
Dphil., University of Oxford, UK
Current Position: Lecturer, SUT

Dr. Supachai Awiphan
Ph.D., University of Manchester, UK
Current Position: Researcher, NARIT

Dr. Teerasak E-kobon
Ph.D., University of Glasgow, UK
Current Position: Lecturer, KU

Dr. Pinit Kidkhunthod
Ph.D. , University of Bristol, UK
Current Position: BLM XAS, SLRI

Dr. Atchara Jaroenjittichai
Ph.D., University of California, USA
Current Position: Lecturer, CMU

Dr. Chakrit Pongkitivanichkul
Ph.D., King's College London, UK
Current Position: Lecturer, KKU

# Summer School@DESY

| year | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 |
|---|---|---|---|---|---|---|---|---|---|---|
| no. of student | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |

| year | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|---|
| no. of student | 3 | 4 | 4 | 4 | 4 | 4 |

total of 41

# Summer Schools@CERN : School Teachers (Physics)

2010-2018 total of 18

# Summer Schools@CERN : UG & PG Students

2010-2018

total of 24

22 currently in their PG studies

2 PhDs

**1@SLRI : Accelerator Physicist**
**1@NARIT : Researcher**

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# Some CERN's Alumni

## CMS Collaboration, CERN

## ATLAS Collaboration, CERN

## ALICE Collaboration, CERN

## LHCb Collaboration, CERN

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# Summer Schools@CERN : Secondary School Students

| Year | Students | Teachers |
|---|---|---|
| 2013 | 10 | 1 |
| 2014 | 12 | 2 |
| 2015 | 12 | 2 |
| 2016 | 12 | 2 |
| 2017 | 12 | 2 |
| 2018 | 12 | 2 |

**Remarks**

- most went for physics
- some went for med., engineering

All went for science

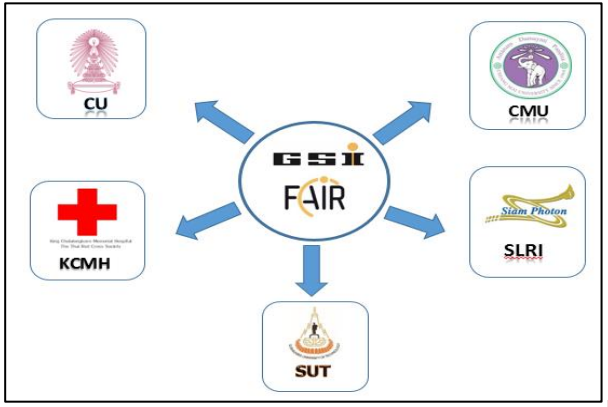
1@MIT, 1@Stanford, 1@Purdue, 1@Cambridge, 1@Tokyo IT

1@Business, 1@Teacher College

# GSI Helmholtz Center for Heavy Ion Research & Thailand

| Topics | Thailand | GSI/FAIR |
|---|---|---|
| • Hadron and hadronic<br>• Quark matter physics | SUT, CMU | PANDA, CBM, Theory |
| • Atomic Physics<br>• Plasma physics<br>• Materials research | CMU, SUT, SLRI, CU | APPA |
| • Radiation biophysics and therapy-related research with proton and ion beams<br>• Medical Physics | KCMH, SUT, CU, CMU | APPA |
| • Accelerator physics and technology<br>• Detector instrumentation and technology | SLRI, CMU, SUT, CU | Technical Integration Accelerator Operations |
| • High performance computing, hardware and software development | SUT | PANDA , Scientific IT & HPC |

- Since 2017 GSI has provided 2 scholarships for summer-students yearly
- 2018, 4 thai students participate GSI's programs

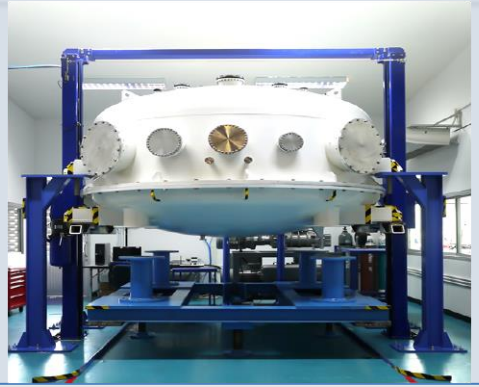


Professor Dr. Paolo Giubellino, Scientific Managing Director of GSI and FAIR

Jörg Blaurock, Technical Managing Director of GSI and FAIR

Ursula Weyrich, Administrative Managing Director of GSI and FAIR

# Improvement of Innovation Capability



# Establishing friendships worldwide

# Our future settings

An IUPAP-IUCr project within the 2016-2019 ICSU Grants Programme

LAAMP

Lightsources for Africa, the Americas, Asia and Middle East Project

CERN

DESY.

GSI

FAIR

長岡技術科学大学
Nagaoka University of Technology

EXFEL &
..?.. more

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