

SEA COAST 2024
South-East Asian Crystallographic Overview And Systematic Training
January 29 - February 7, 2024
King Mongkut's University of Technology Thonburi (KMUTT)
Bangkok, Thailand

Detailed Program

Color code:

Lecture session

Questions and answers and one-on-one problem-solving

Software and Tutorials

Meals and Coffee breaks

Other

January 29

Introductions; Basic concepts

All lectures will be in V Space, LX Building

08:15 – 08:40	Check-in. Continued throughout the day	<i>V space, LX Bldg.</i>
08:40 – 08:50	Welcome by KMUTT Management Opening	KMUTT leadership L. Ruckthong
08:50 – 09:00	Introduction to the school	R. Sanishvili
09:00 – 09:15	Speaker introductions	All speakers
09:15 – 10:45	Overview of projects and problems	All participants
10:45 – 11:30	Roadmap for crystal structure determination	E. Krissinel
11:30 – 11:45	Q/A, Discussion	All participants
11:45 – 12:45	Lunch	<i>V space, LX Bldg.</i>
12:45 – 14:15	Basic Theory of Diffraction	A. Leslie
14:15 – 15:15	Data collection concepts	R. Sanishvili
15:15 – 15:30	Q/A, Discussion	All participants
15:30 – 15:45	Break	<i>V space, LX Bldg.</i>
15:45 – 16:45	Crystallization, Cryoprotection, Sample Handling	T. Bergfors
16:45 – 17:15	Crystallization of membrane proteins	S. Trampari
17:15 – 18:15	CCP4 Cloud	M. Fando
18:15 – 18:30	Zoom/Slack connection	R. Keegan
19:00 – 21:00	Extended dinner, get to know each other	<i>KMUTT garden</i>

January 30

Crystallographic data: Diffraction experiments, Processing

Lectures in the morning will be V Space, LX Building.

Lectures in the afternoon will be in SCL702

08:45 – 09:45	Data collection, practical tips	R. Sanishvili
09:45 – 10:15	State of the art in detectors for data collection. HDF5 file format	S. Trampari
10:15 – 10:30	Break	<i>V space, LX Bldg.</i>
10:30 – 11:00	Macromolecular Crystallography Beamlines at Diamond Light Source	D. Hall
11:00 – 11:45	Theory of data processing	A. Leslie
11:45 – 12:00	Q/A, Discussion	All participants
12:00 – 13:00	Lunch	<i>V space, LX Bldg.</i>
13:00 – 13:45	Theory of data processing, continued	A. Leslie
13:45 – 14:30	Twinning and other pathologies in data	A. Lebedev
14:30 – 14:45	Q/A, Discussion	All participants
14:45 – 15:00	Break, Set up on-line lecture and tutorial for XDS	<i>SCL702</i>
15:00 – 15:45	Data Processing with XDS	K. Diederichs
15:45 – 16:30	XDS tutorial	K. Diederichs
16:30 – 17:30	Data processing with AutoPROC	C. Vonrhein
17:30 – 17:45	Break	
17:45 – 18:30	Data quality	K. Diederichs
18:30 – 19:00	Anisotropy of data	C. Vonrhein
19:00 – 20:00	Dinner	<i>SCL901</i>

January 31

Data processing, Refinement

All lectures will be in SCL702

08:45 – 09:30	Data Processing with MOSFLM	A. Leslie
09:30 – 10:15	MOSFLM Tutorial	A. Leslie
10:15 – 10:30	Break	SCL702
10:30 – 11:15	Data Processing with DIALS	J. Parkhurst
11:15 – 12:00	DIALS Tutorial	J. Parkhurst
12:00 – 13:00	Lunch	SCL901
13:30 – 14:30	Refinement with BUSTER	C. Vonrhein
14:30 – 15:15	Problem-solving: Data processing	All interested
15:15 – 15:30	Break	SCL702
15:30 – 19:00	Problem-solving: Data processing	All interested
19:00 – 20:00	Dinner	SCL901
20:00 – 22:00	Problem-solving: Data processing	All interested

February 1

Data collection at Diamond Light Source, Data processing

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All lectures and remote data collection will be in SCL702

08:45 – 10:15	Beamline training	D. Hall
10:15 – 10:30	Break	SCL702
10:30 – 12:00	Data collection, processing, problem solving	All interested
12:00 – 13:00	Lunch	SCL901
13:00 – 15:30	Data collection, processing, problem solving	All interested
15:30 – 15:45	Break	SCL702
16:00 – 19:00	Data collection, processing, problem solving	All interested
19:00 – 20:00	Dinner	SCL901
20:00 –	Data collection, processing, problem solving	All interested

February 2
Experimental phasing, Molecular graphics, Model building

All lectures will be in SCL702

08:45 – 09:30	Fundamentals of Experimental Phasing	R. Read
09:30 – 10:15	Phaser	R. Read D. Liebschner
10:15 – 10:30	Break	SCL702
10:30 – 11:15	Coot basics	B. Lohkamp
11:15 – 12:00	Advanced features in Coot	B. Lohkamp
12:00 – 13:00	Lunch	SCL702
13:00 – 13:45	Density modification in phasing with SHELX	I. Uson
13:45 – 14:30	Automated phasing with AutoSol in Phenix	D. Liebschner
14:30 – 15:15	Model Building with ARP/wARP	G. Chojnowski
15:00 – 15:15	Break	SCL702
15:15 – 15:45	News in RNA/DNA model building	G. Chojnowski
15:45 – 19:00	Problem-solving	All interested
19:00 – 12:00	Dinner	SCL901
19:45 – 22:00	Problem-solving	All interested

February 3

Free Day

February 4

Molecular Replacement

All lectures will be in SCL702

08:45 – 09:30	Fundamentals of Molecular Replacement	R. Read
09:30 – 10:15	Introduction to MR in CCP4Cloud	R. Keegan
10:15 – 10:30	Break	<i>SCL702</i>
10:30 – 12:00	Molecular replacement with Phaser	R. Read and D. Liebschner
12:00 – 13:00	Lunch	<i>SCL901</i>
13:00 – 13:45	ARCIMBOLDO	I. Uson
13:45 – 14:30	ARCIMBOLDO tutorial	I. Uson
14:30 – 15:15	Advanced MR in CCP4Cloud	R. Keegan
15:15 – 15:30	Break	<i>SCL702</i>
15:30 – 16:15	VAIRO: Guiding predictions with experimental knowledge	I. Uson
16:15 – 19:00	Problem-solving	All interested
19:00 – 20:00	Dinner	<i>SCL901</i>
20:00 – 22:00	Problem-solving	All interested

February 5

Refinement

All lectures will be in SCL702

08:45 – 09:30	Fundamentals of Refinement	G. Murshudov
09:30 – 10:30	Refinement with CCP4 (REFMAC)	G. Murshudov
10:30 – 10:45	Q/A, Discussion	All participants
10:45 – 11:00	Break	SCL702
11:00 – 12:00	Refinement with Phenix	D. Liebschner
12:00 – 13:00	Lunch	SCL901
14:00 – 15:15	Problem-solving	All interested
15:15 – 15:30	Break	SCL702
15:30 – 19:00	Problem-solving	All interested
19:00 – 20:00	Dinner	SCL901
20:00 – 22:00	Problem-solving	All interested

February 6

Ligands, Model inspection and completion

All lectures will be in SCL702

08:45 – 09:30	Ligands and Ligand Dictionary	G. Murshudov
09:30 – 10:00	Ligand building tools	G. Murshudov
10:30 – 10:30	Ligands in Coot	B. Lohkamp
10:30 – 10:45	Break	SCL702
10:45 – 11:15	Ligand Building in Phenix	D. Liebschner
11:15 – 12:00	Model completion	R. Joosten
12:00 – 13:00	Lunch	SCL901
13:00 – 13:45	Validation, Deposition	R. Joosten
13:45 – 14:45	Panel discussion: “A reviewer says...”	All interested
14:45 – 15:30	Problem-solving	All interested
15:30 – 15:45	Break	SCL702
15:45 – 19:00	Problem-solving	All interested
19:00 – 20:00	Dinner	SCL901
20:00 – 22:00	Problem-solving	All interested
	Start Backups	

February 7

Neutron Diffraction; Cryo-EM; Bioinformatics

All lectures will be in SCL702

08:45 – 09:30	Basics of Neutron Crystallography	D. Myles
09:30 – 10:15	Experiments with Neutron Diffraction	D. Myles
10:15 – 10:30	Break	<i>SCL702</i>
10:30 – 11:15	Basics of Cryo Electron Microscopy	M. Winn
11:15 – 12:00	Structure solution with Cryo EM	M. Winn
12:00 – 13:00	Lunch	<i>SCL901</i>
13:00 – 13:20	Docking models into CryoEM maps	R. Read
13:20 – 13:45	Introduction to refinement in Cryo EM	G. Murshudov
13:45 – 14:00	Q/A, Discussion	All participants
14:00 – 14:45	Bioinformatics	M. Ruengjitchat chawalya
14:45 – 15:30	Analysis of Macromolecular Complexes (PISA)	E. Krissinel
15:30 – 15:45	Break	<i>SCL702</i>
15:45 – 17:30	Student feedback	All participants
17:30 – 17:45	Speaker feedback	All participants
17:45 – 18:00	Concluding remarks	Organizers

Adjourned