http://www.msl.titech.ac.jp/~tkamiya/

Kamiya & Katase Laboratory

We belong to “School of Materials and Chemical Technology, Department of Materials Science and Engineering”.

We jointly manage Lab. with Hosono, Hiramatsu, Matsuishi Lab.

***Application guide for master or doctoral programs (2020)**
https://www.titech.ac.jp/english/graduate_school/admissions/guide.html

***International Graduate Program (IGP)**
https://www.titech.ac.jp/english/graduate_school/international/international_graduate/
Tokyo tech. has international graduate program (IGP) as an opportunity for qualified international students, who may have little or no knowledge of the Japanese language, to enroll in Tokyo Tech’s master’s or doctoral programs and pursue advanced degrees in Japan.

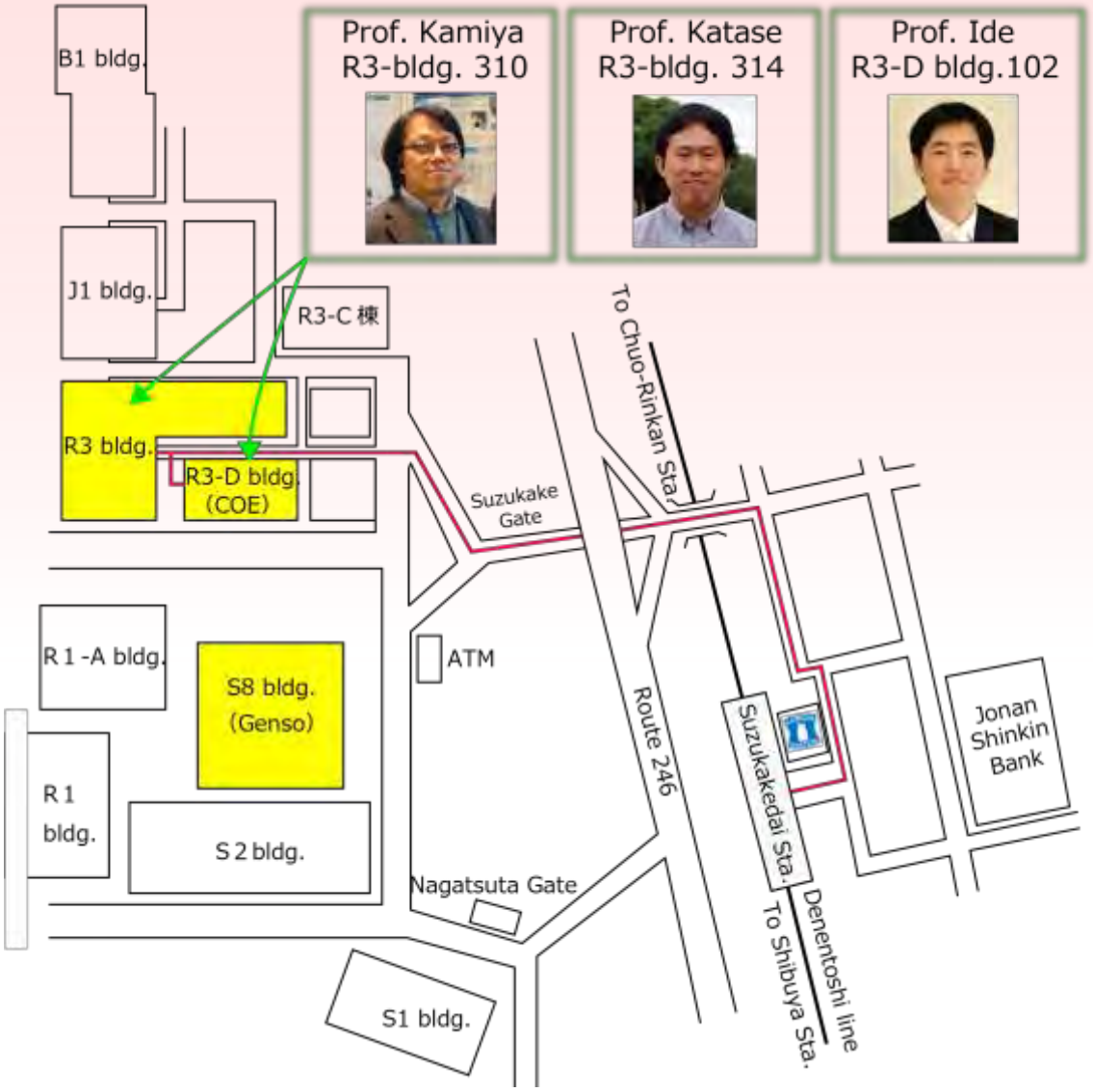
Member

■ Staff
- Toshio Kamiya, Professor
- Takayoshi Katase, Associate Professor
- Keisuke Ide, Assistant Professor

■ Students (with Hosono, Hiramatsu, Matsuishi Lab.)
- Ph.D. students: 8
- Master students: 17
- Bachelor students: 1
  (Including international students: 10)

Address: 226-8503
4259 Nagatsuta, Midori, Yokohama, 226-8503, Japan
(Suzukakedai Campus)
Institute of Innovative Research, Tokyo Institute of Technology
Laboratory for Materials and Structures, R3-D 102

Kamiya & Katase Lab. map



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Takayoshi Katase TEL +81-45-924-5314 E-mail katase@mces.titech.ac.jp
Keisuke Ide TEL +81-45-924-5325 E-mail keisuke@mces.titech.ac.jp

Lab member. 2019

International student

M1 Shi (China)

M1 Linwei (Australia)

D2 Kaiwen (China)

M1 Chen (China)

M2 Zhang (China)

D1 He (China)

Researcher: Christian Niedermeier

Doctor course : 4, Master course : 13

Bachelor course : 2

Lab. life

☆Annual schedule

Apr.:　Welcome party
May:　Campus visit (Open campus)
Jul.:　Interim progress report, Party
Aug.: Summer vacation, BBQ party
Sep.-Dec.: Conference (JSAP meeting, CSJ meeting, etc.)
Dec.:　Interim progress report, Party, Winter vacation
Feb.:　Master & bachelor course presentation, Party
Mar.:　Farewell party, Conference, Graduation ceremony

A desk and a PC are provided for each student. There is no hours on duty, but we basically recommend students to come to school at 10:00AM in weekday. We take a laboratory seminar periodically once a week, where students can discuss and get advices from teachers.

All students use high-vacuum chamber. They fabricate and evaluate thin-films and devices by themselves.

Party

Student activity

■ Awards for students (in 5 years)

Many students win several awards in domestic and also international conferences, appreciating their research and presentation.

'17	M2 Futakado	TOEO10 Silver Poster Award
	M2 Watanabe	Doi award
	D2Kim	Inoue research award
'16	D2 Kim	JSAP Young Scientist Presentation Award
	M1 Kishida	ITC2016 Poster Paper Award
	M2 Tang	Doi award
	D2 Kim	Doi award
	D3 Xiao	Doi award
'15	D2 Kim	TFMD student award
	D2 Chris	TOEO9 Gold award
'14	M2 Ishikawa	TFMD student award
	B4 Johaness	EPL Poster Award of ITC2014
'13	D1 Sato	JSAP Young Scientist Presentation Award
	M2 Matsuda	Young researcher poster award

Best paper award for Mr. Kishida in ITC2016@Taiwan

Student award for Mr. Kim (D3) in TFMD@Kyoto

Award ceremony for Mr. Futakado (M2) in TOEO10

Doi award for Mr. Watanabe (M2)

■ Student's international oral presentation (in 5 years)

Many students attend international conferences and present their research achievements.

'17	D1 Kobayashi	ICAE2017 (Jeju, Korea)
	M2 Watanabe	SID Display Week (San Francisco, USA)
	D1 Watanabe, M2 Ota, Futakado	TOEO10 (Tokyo, Japan)
	D1 Watanabe, Kobayashi,	STAC10 (Yokohama, Japan)
'16	M2 Kishida	International TFT Conf. (Hsinchu, Taiwan)
	D3 Kim, M2 Watanabe	iMiD2016 (Jeju, Korea)
'15	D2 Kim	STAC9 (Tsukuba)
	D2 Kim, D1 Tang, M2 Kikuchi	TOEO9 (Tsukuba Japan)
	M2 Tang	Int. Meeting on Information Display (Daegu Korea)
	D3 Xiao	MRS Spring Meeting (SanFrancisco USA)
	M2 Tang	International Conference on HAXPES (Hsinchu Taiwan)
'14	M2 Inoue, M2 Tang	E-MRS/MRS-J Bilateral Symposia(Yokohama)
	M2 Hanyu M1 Ishikawa,	ITC2014 (Delft, Netherlands)
	D2 Kim	STAC8 (Yokohama)
'13	M2 Kim	ISIEM2013 (Rennes France)
	M1 Hanyu	Int'l Thin-Film Transistor Conference (Tokyo)
'12	M2 Miyase	MRS Fall meeting (Boston USA)
	D1 Xiao	STAC7 (Yokohama)

'15: TOEO-9@ Tsukuba, Japan
(Ran, Chris, Tang, Kikuchi, Kobayashi, Watanabe, Kishida)

'16: IMID 2016@Jeju, Korea
(Prof. Ide, D3 Kim, M2 Watanabe)

■ Student first author's papers (extract)
5 papers (ʻ17), 10 papers (ʻ16), 10 papers (ʻ15)

ʻ17
- D1　Watanabe　physica status solidi (a)
- M2　Watanabe　*ECS J. Solid State Sci. Technol.*
- Kim (After graduation) NPG Asia Mater.
- Chris（After graduation）　Phys. Rev. B (Rapid Communications)

ʻ16
- D2 Kim　AIP Advances, Thin Solid Films, J. Ceram. Soc. Jpn.
- D1 Tang　Thin Solid Films
- M2 Inoue　Chem. Mater.
- D2 Chris　Appl. Phys. Lett.
- Xiao（After graduation）Appl. Phys. Lett.　etc.

ʻ15
- D1 Tang　J. Appl. Phys.
- M2 Inoue　J. Appl. Phys.
- D3 Xiao　Phys. Chem. Chem. Phys.
- M2 Orui　J. Display Technology
- D3 Xiao　Appl. Phys. Lett.　etc.

ʻ14
- M2 Tang　J. Ceram. Soc. Jpn.
- D2 Kim　J. Ceram. Soc. Jpn.
- D3 Xiao　J. Am. Chem. Soc.
- M2 Miyase　ECS JSS
- M2 Hanyu　J. Displ. Technol.　etc.

ʻ13
- M2 Hanyu　Appl. Phys. Lett.
- D1 Xiao　Thin Solid Films
- M2 Kim　Thin Solid Films
- D3 Abe　Thin Solid Films　etc.

ʻ12
- D2Abe　Phys. Rev. B
- D3 Lee　J. Appl. Phys.
- D3 Lee　Electrochemical and Solid-State Letters
- M2 Inoue　J. Appl. Phys.
- M2 Ide　Thin Solid Films
- D2 Abe　Thin Solid Films
- D3 Inoue　Thin Solid Films　etc.

Recent events


Farewell party

Recreation (Snowboard)

Summer party

Graduation ceremony (‘16)

Graduation ceremony (‘15)

International student party

Wine party

Zhang san's party

Chris san's party

Xiao san's party

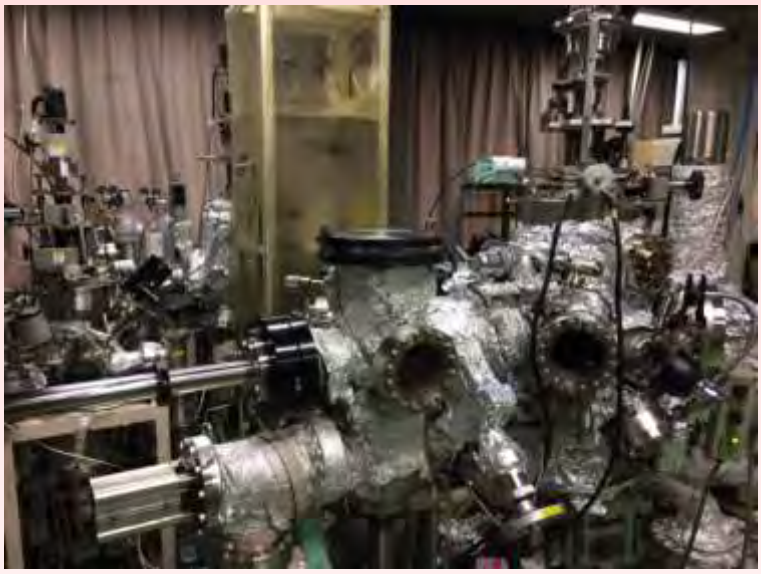
2019.7 Institute's BBQ

2019.6 Encourage party

2019.4 Entrance ceremony

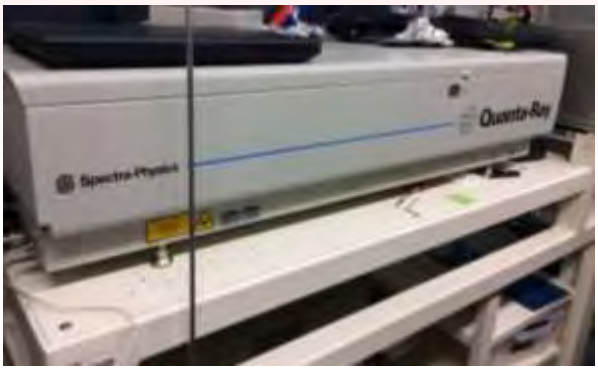
Facility

EB deposition chamber



Pulsed laser deposition (PLD) system

Excimer laser

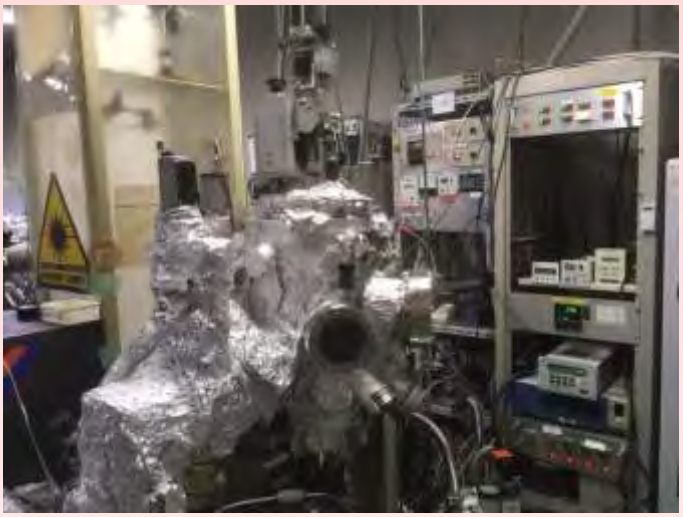


High power Nd:YAG laser

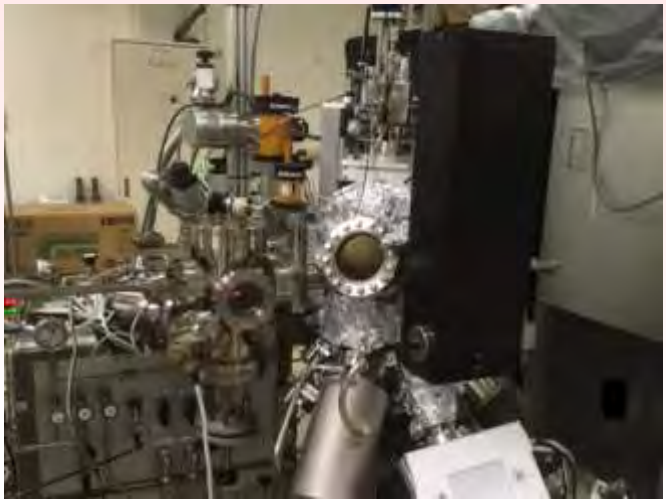
Ultra-high vacuum sputtering system

Molecular beam epitaxy system

Oxide PLD system



Oxide PLD system #2



Nitride PLD-MBE system

Pnictide PLD system

Oxynitride PLD system

Chalcogenide PLD system

High-speed furnace

High-temp. vacuum furnace

Tube furnace

box furnace

Globe box

Chemical mechanical polishing

EB lithography

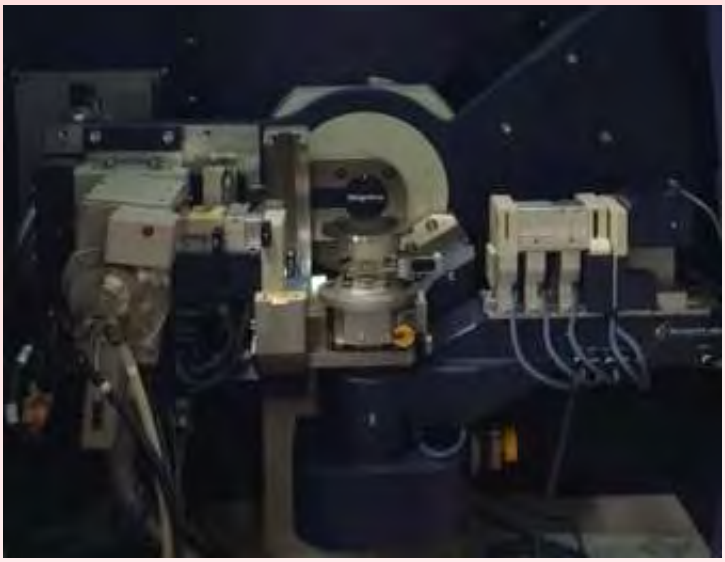
Mask aligner

UV&Ozone cleaner

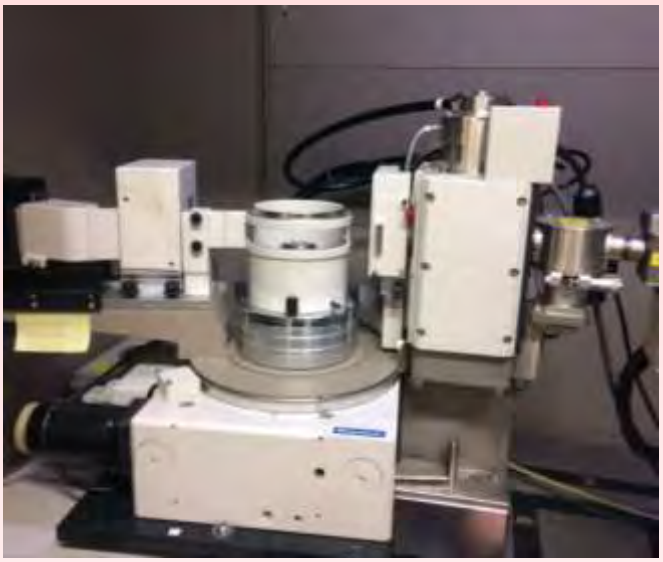
Wire bonder

Dry etching system

Manual prober system



High-resolution XRD#1

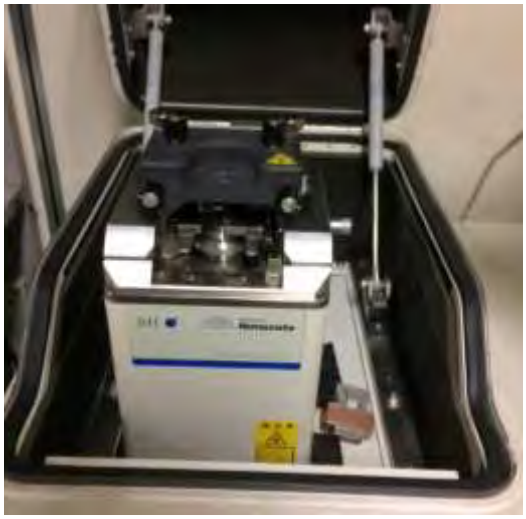


Powder XRD

X-ray Fluorescence

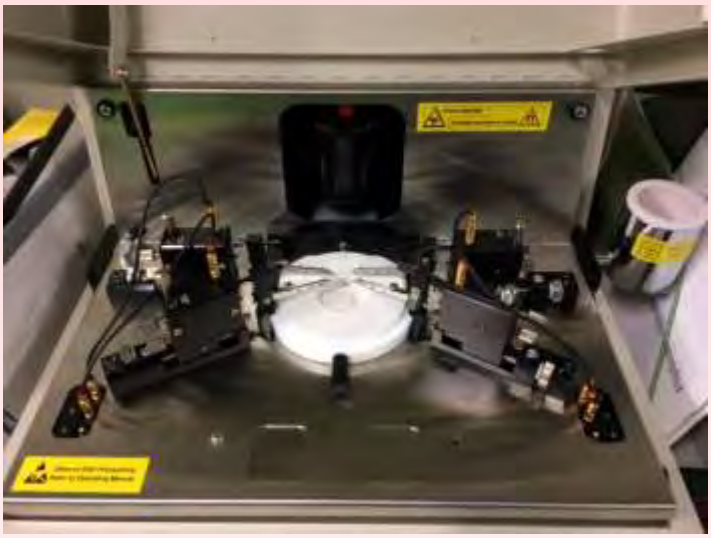
UV-Vis-NIR spectrometer

Fluorescence spectrophotometer



Atomic force microscope

AC Hall-effect measurement system



DC Hall-effect measurement system

Magnetic property meas. system
(SQUID-VSM)

Physical property measurement system
(PPMS)

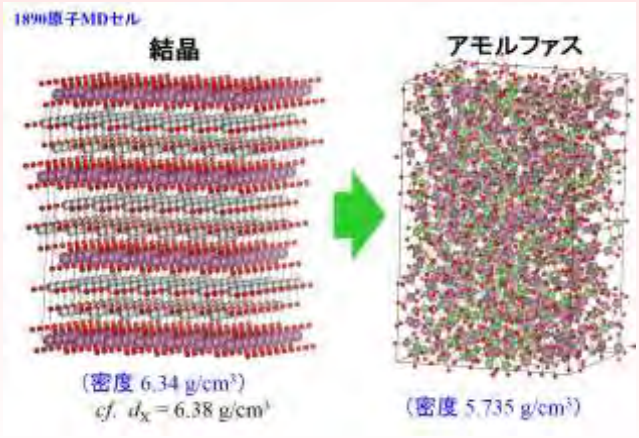
Computer assist science

We combine computer assist science for state-of-the art material's research

First-principles calculations

VASP and CASTEP are available by using the super computer "TSUBAME" in Tokyo Tech. We use the program for designing our new materials and also for revealing the underlying mechanism of their functions. We can freely use the workstations in many cases.

Molecular dynamics simulations

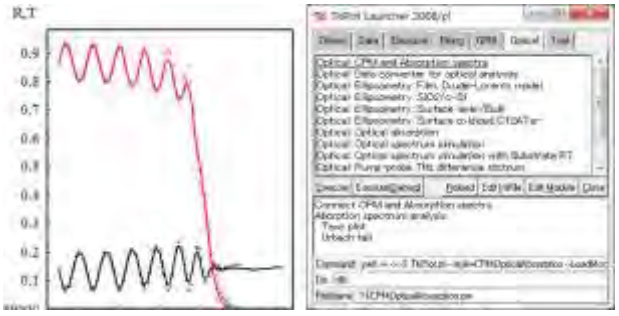


We use Molecular dynamics simulation for revealing the physical movements of atoms and ions in amorphous materials. The combination with First-principle calculations is a powerful approach to explore new materials.

Device simulations

ATLAS (Silvaco Inc.) program is available. By defining the defects in semiconductors, we understand the relationship between device characteristics and the material's defect levels. We can also understand the device properties by visualizing the charge density and potential distribution in the devices.

Data simulations



We use our original data simulation system. Numerical analysis is possible for XRD, PES, etc. by least-squares method. For example, we can easily analyze the dielectric functions and thicknesses from optical spectra.

It was great honor to receive “Doi award” as a result of master-course in Kamiya-Katase Lab.

M2 Tang Hao-Chun

It’s my great honor to receive ”Doi award” given from the Department of Innovative and Engineered Materials after receiving the master degree in Kamiya-Lab. During the two-year master course, I mainly focused on the researches relating to the defect states in amorphous In–Ga–Zn–O semiconductors. In addition to conducting my own researches, I also attended many international conferences to present my results. Those are priceless experiences in my life. I am happy to say I am one the members in Kamiya-Lab.

土肥賞

Tang Hao-Chun 殿