Division of Electrical Engineering and Computer Science	Research field	Thin Film Electronics	Lab. ID EC16
Laboratory web site	http://wwwtf.ee.t.kanazawa-u.ac.ip/		
Research subjects			

A thin-film deposition technology supports a recent advanced semiconductor integration technology and a development of electronic and optical devices with additional value, and a development of the thin-film materials with new functions realizes new devieces. We study about the deposition of carbon-based (e.g. diamond) semiconductor thin-films (single-, poly-, and nano-crystals) and insulator thin-films (amorphus substance), the elucidation of their electronic and optical properties, and their device application.

Master/Doctor course: Education policy, curriculum, typical activity in the laboratory

Master and doctor courses:

Students introduce a paper published in international journals related each research theme and report each experimental and calculation results in a weekly labo-meeting.

Students make a presentation of each research results in a conference and journal actively. Doctor course:

octor course.

It is necessary for submitting a doctoral thesis that a paper is published in an international journal.

Daily life in the laboratory, etc.

The laboratory has a discourse space for laboratory members, it is used as the forum for lively discussion and the rest. (M1)

The laboratory supplies one PC per one person, it supports our research activities more smoothly. (M1) The activity in the laboratory is free time except for seminar and we can conduct research at our pace. (M1) Laboratory activities is held regularly, it deepens the friendship of the member. (M2)

Message or comments by the laboratory faculty staffs

The policy of research guidance for the students in our laboratory is basically intended to respect student's own autonomy. This is because the students themselves should take initiative to their own research subject, and know the interest to proceed the research subjects with ingenuity and the sense of accomplishment as a result. We are ready to support the student as much as possible for that.

Currently, most student who finished Master's Program get their places for employment mainly in manufacturing and power company. Recently, some students go to the doctoral program increases

students go	students go to the doctoral program increases.				
Recent Master theses in these 3 years (+ more if appropriate)					
year.month	Thesis title (including English translation of Japanese thesis title)				
2021.3	Formation of mechanical damage-free and flat diamond surface based on carbon solid solution into nickel				
2021.3	Development of highly oriented technique for diamond films on nickel substrates				
2021.3	High rate growth of single crystalline diamond (100) films by hot filament chemical vapor deposition				
2021.3	Formation of Ni ohmic contacts to O-terminated p-type diamond (111)				
2020.3	Characterization of nitrogen-doped diamond				
2020.3	Reduction of interface state density in Al2O3/diamond (111) MOS structure				
2020.3	Basic research for enlargement of single crystalline diamond (100) substrates				
2020.3	Local electrical characterization of atomically controlled diamond (111) surfaces				
2020.3	Nano-scale growth control on diamond (111) surfaces				

Recent Doctoral theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2021.3	Microfabrication of Single-crystal Diamond Surface by Carbon Solid Solution into Nickel		
2021.3	Development of etching technique for realization of trench-type inversion-channel diamond MOSFET		
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