Division of Electrical Engineering and Computer Science	Research field	Optical and Electronic Sensing	Lab. ID EC13	
Laboratory web site	http://oes-la	ab.w3.kanazawa−u.ac.jp		
Research subjects				
Optical technology is widely used for optical disc systems and long-haul optical communication systems, and is also expected to be applied in high-sensitivity and highly-acurate optical sensing system. The features of optical sensing systems are capability of remote sensing, non-contant sensing, immune to electromagnetic field, and high-sensitivity by utilizing interference of lightwave. The keyword of our laboratory is "Measurement by Lightwave". We are developing optical FMCW ranging system for characterization of long optical fibers and for object profiling in micrometer and nanometer scale. Our optical FMCW ranging system can be also applied to three-dimensional scanners and laser laders for vehicles.				
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory				
Master/Doctor students should be good models to all students in laboratory, and are expected to be leaders in academics and companies after graduation. Active research is requested for M.E and Ph.D degrees. Through active and continuing discussion with a upervier, Master/Doctor students plan their research readmap and approach, do experiments according to the research plan, check and consider the results, and plan following research approach for improvement. Students should present their research every week to all the laboratory members (Professor and students) using slides.				
Daily life in the laboratory, etc.				
Optical sensing technology is studied in this laboratory and I am studying lasers lightwave technologies electronic				
circuits and signal processing to develop optical sensing technology. (M2) A professor is very familiar and kindly supervise and stimulate us. We are studying actively and enjoying our research. (M1)				
Message or comments by the laborato	ry faculty sta	ffs		
It is very important to understand basics and principles in your study because current technologies will be replaced with new technologies in near future. Please friendly compete with your colleague in our laboratory, and enjoy your research. Please develop your communication skill and technical writing skill in English and your mother language.				
Recent Master theses in these 3 years	s (+ more if a	ppropriate)		
vear month Thesis title (including Eng	lish translatio	n of Japanese thesis title)		
2021 31 inearizing optical frequer	ncy sweep of	a DFB laser by k-sampling method and resampling	method	
2020.3 Development of underwater LiDAR system using blue laser beam				
2019 9 Design and Simulation of	OFDM syster	n in visible light communications		
2019.3 Development of three-dir sensor using a VCSEL	nensional obje	ect profiling system by high accuracy FMCW optical	ranging	
2018.3 Development of multiplex	ed FMCW opt	ical ranging system and its application to object pro	filing system	
2017.3 Linearizing optical freque	ency sweep of	f a laser diode for high resolution FMCW optical sen	sing system	
2017.3 Development of highly ac	curate FMCW	optical ranging system and its application to object	profiling	
2016.3 Development of FMCW op	otical sensing	system using photodetector array		
2016.3 Development of high spee	ed Si optical r	eceiver using standard CMOS process		
2015.3 Development of highly ac	curate FMCW	optical sensing system and its application to object	t profiling	
2015.3 Development of high-speed Si photodiodes fabricated by standard CMOS process				
2015.3 Fabrication of guided-wave optical devices for polymer lightwave circuits				
2014.9 Development of remote object profiling using FMCW optical ranging system				
2014.3 A study on high-speed photoreceiver utilizing standard CMOS process				
2014.3 Fabrication and characterization of organic optical waveguide using PET-G				
2013.3 rabrication of $1a_2 U_5$ optical waveguides by spin-coating method				
2013.3 A study on polystyrene optical waveguides doped with Nd complex				
2012.9 A study on optical waveguides and lightwave circuits using photosensitivity epoxy resin				
Recent Doctoral theses in these 3 yea	lich translation	appropriate)		
Vear.month Thesis title (Including Eng	nish translatio	in or Japanese thesis title)	nticol	
2020.3 ranging system				
2020.3 Accurate 3D object profil	ING BY FMCW	optical ranging system using a VUSEL		

2017.3	Characterization and Optimization of Avalanche Photodiodes Fabricated by Standard CMOS Process for High-speed Photoreceivers		
2016.3	A novel technique of optical frequency sweep linearization of a DFB laser for high resolution FMCW		
	renectometry		
Laboratory n	nail address	Koichi Iiyama ≺iiyama *at* se.kanazawa−u.ac.jp>	