

Division of Electrical Engineering and Computer Science	Research field	Optical Communication Engineering	Lab. ID EC11
Laboratory web site			
Research subjects			
<p>We are developing new optical devices by using surface plasmons: The electromagnetic surface modes that is called a surface plasmon can exist in the metal surface. Moreover, the efficiency of the light emission and absorption can be changed by controlling the density of states of light in the device. We are researching organic and semiconductor optical devices by using these effects. In addition, we are developing the optical source of the new concept by using the interaction of the surface plasmon and the electron beam in the vacuum.</p>			
Master/Doctor course: Education policy, curriculum, typical activity in the laboratory			
<p>The debriefing session on the status of the research is held every week in addition to the class of the standard. In the debriefing session, the status of each one's topics of research and the research policies in the future are discussed each other. Moreover, it is a very welcome to introduce the content of study and the paper of reference that the student studies. Please often think voluntarily, and devise my own way in the research.</p>			
Daily life in the laboratory, etc.			
<p>Let's do a regular lifestyle, and do study and research activities happily.</p>			
Message or comments by the laboratory faculty staffs			
<p>In the laboratory, the student and the teacher are equal. In the school days., it is preferable that the student finishes reading the fine books concerning physics and engineering like the opto-electronics, quantum mechanics, and the electromagnetism, etc.</p>			
Recent Master theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2020.3	Design of EO Polymer / Plasmonic Optical Phased Array		
2017.3	Design of optical intensity modulator using surface plasmon waveguide		
2017.3	Basic research on surface plasmon emission using electron beam		
2017.3	Photo-luminescence enhancement from organic light-emitting film using surface plasmon		
2016.3	Photo-luminescence enhancement from dye doped organic layer on metal		
2016.3	Optical emission using interaction with electron beam and surface plasmons		
2015.3	Noise Characteristics of Semiconductor Optical Amplifiers.		
2014.3	Noise Characteristics of the Tunable Integrated Laser.		
2014.3	Basic Experiment on Milliwave Amplification by Using Electron Beam.		
2013.3	Optical emission from waveguide excited by using electron beam.		
2013.3	Operating Characteristics of Semiconductor Optical Amplifier.		
Recent Doctoral theses in these 3 years (+ more if appropriate)			
year.month	Thesis title (including English translation of Japanese thesis title)		
2013.9	Numerical Analysis of Optical Feedback Noise and Its Reduction in Semiconductor Lasers.		
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