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| Division of Electrical, Information and Communication Engineering                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Research field                                                                                        | High-speed Electronics | Lab. ID<br>EI10 |
| Laboratory web site                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <a href="http://hslab.w3.kanazawa-u.ac.jp/index.html">http://hslab.w3.kanazawa-u.ac.jp/index.html</a> |                        |                 |
| Research subjects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                       |                        |                 |
| <p>Silicon Photonics: We are developing and evaluating prototype optical devices (high-speed photodetectors, multifunctional optical waveguides, etc.) using silicon LSI micro technology.</p> <p>Optical wireless power transfer: We are developing prototype optical wireless power transfer systems using semiconductor lasers and solar cells.</p> <p>Optical computing: High-speed, low-power computing using optical parallelism and interferometry is being measured using devices based on the above silicon photonics technology.</p> <p>Quantum sensing: We are developing a high-sensitivity sensing system for magnetic field and temperature using the optically detected magnetic resonance (ODMR) method at the Diamond NV Center.</p> |                                                                                                       |                        |                 |
| Master/Doctor course: Education policy, curriculum, typical activity in the laboratory                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                       |                        |                 |
| <p>Master course students: The research subject is decided by discussion with supervisor.</p> <p>Doctor course students: Students find the research subject by themselves.</p> <p>All students: Journal introduction (bimonthly), Progress report (weekly), Presentation at a conference, Writing the journal paper.</p>                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                       |                        |                 |
| Daily life in the laboratory, etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                       |                        |                 |
| <p>All members decide the schedule by themselves.</p> <p>They must attend the progress report and the journal introduction.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                       |                        |                 |
| Message or comments by the laboratory faculty staffs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                       |                        |                 |
| <p>We hope for active students who like optoelectronics.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                       |                        |                 |
| Laboratory mail address                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Takeo Maruyama <maruyama *at* ec.t.kanazawa-u.ac.jp>                                                  |                        |                 |