**Progetto Laurea Magistrale Plus**
(Students enrolled for the first time in the Academic Year 2020/21, undertaking the internship in the company in 2021/2022)

### University infos

<table>
<thead>
<tr>
<th>University degree:</th>
<th>PHYSICS</th>
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<tbody>
<tr>
<td>University tutor / Thesis supervisor:</td>
<td>Prof. Matteo Galli</td>
</tr>
<tr>
<td>Courses / Expertize of the university tutor:</td>
<td>Integrated photonics for classical and quantum applications</td>
</tr>
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### Company infos

<table>
<thead>
<tr>
<th>Company name:</th>
<th>CEA-Leti</th>
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<tbody>
<tr>
<td>Company Tutor(s):</td>
<td>Sylvain Guerber and Daivd Fowler</td>
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<tr>
<td>Role in the company of the tutor(s):</td>
<td>R&amp;D engineers in silicon photonics</td>
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### Contents and infos on project and internship

**Project title:** Design and optimization of antenna gratings for optical phased arrays

Activity scenario and targets of the internship - Area/Department/office/lab (where the trainee will be involved):
CEA-LETI Grenoble/Department of optoelectronics (DOPT)/Silicon Photonics Laboratory

First six months (2021): Within the context of solid-state LIDAR systems, the student will develop grating based antennas for optical phased arrays based on silicon photonics platforms. He/She will characterize existing test structures and simulate new design concepts. The second 6-month term of the internship will consist of characterizing and understanding the performance the new designs and suggesting further refinements.

**Background / Expertize of the student required for the internship:**
Master studies including semiconductors, photonics, nanotechnologies, .

**Potential thesis topics:**
Highly integrated solid-state LIDAR systems based on integrated photonics

**Company location and place of work: (Full address)**
CEA-Leti – Optics and Photonics Department – 17 rue des Martyrs – 38054 Grenoble - France

**Time length of the internship:** 12 MONTHS (6 Grenoble + 6 Grenoble)

Benefits provided by the company (at least reimbursement of 500€ per month):
Reimbursement of >=500€ per month in Grenoble

Specific company requests:
Strongly motivated students with good exam scores, team working and flexibility skills to work in a multi-disciplinary environment (photon component design, optical characterization, simulations)

**Other comments:**
The student will work with several highly-qualified people in the field of design and optical characterization, with state-of-the-art equipment. He/She will get a practical insight into various aspects of integrated silicon photonics technology in one of the largest technological R&D institutes in Europe.

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