

# Study and optimization of a compact X-ray source

CentraleSupélec



**NICOLAS BAUDIN**  
INTERNSHIPS IN FRANCE INITIATIVE

<b>Name of the hosting institution in France</b>	Université Paris-Saclay
<b>Name of the host laboratory / research team</b>	LAL
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## Internship offer

**Topic of the internship (title)** Study and optimization of a compact X-ray source

**Proposed dates of the internship** **Start:** 2019-10-01 **End** 2020-03-31

**Scientific and academic objectives of the internship (detailed description of the internship content, work expected from the intern and expected outcomes):**

The compact X-ray source ThomX is currently been built in Orsay and will start in 2019. It is an innovative source based on a compact particle accelerator operating at 50 MeV. In this ring the electrons will collide with a high power laser to produce X-rays by Compton interaction. During this internship the student will take part to the machine commissioning steps and in particular to commissioning of the ring. This work will require understanding the operations of each sub-system of the machine on one side and the beam dynamics on the other side. The measured performances of the machine will be compared with simulations. These simulations will deal with the beam dynamics in a storage ring in a yet unexplored regime.

**Does the project involve a French industry partner?** No

**Targeted Australian university** Any

## Expected profile of applicant

**Level of study** Between 3rd and 5th year of University

**Discipline** Physics

**Required qualities, knowledge and skills** Interest for experimental physics  
Computer programming skills

**Other specific eligibility criteria (such as citizenship requirements, language requirements, ...)** Language: English is sufficient although learning a few words in French would be useful.

