

# Non-destructive Testing (NDT) using non-contact ultrasonic transducer array

Record number : OPR-355

## Overview

### RESEARCH DIRECTION

Nicolas Quaegebeur, Professeur -  
Department of Mechanical Engineering

### INFORMATION

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### ADMINISTRATIVE UNIT(S)

Faculté de génie  
Département de génie électrique et de  
génie informatique  
Département de génie mécanique

### LEVEL(S)

2e cycle  
3e cycle

### LOCATION(S)

Campus principal  
GAUS - Groupe d'Acoustique de l'Université  
de Sherbrooke

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## Project Description

The ultrasound team is looking for a master's / doctoral / post-doc candidate around issues related to the field of Non-Destructive Testing of Industrial Structures and Processes by non-contact ultrasonic imaging.

Aeronautical and civil robotic inspection applications are considered using air-coupled ultrasonic probe arrays. We are looking for a wide variety of profiles who may have a strong interest or expertise in one or more of the following areas:

- Acoustics and vibrations (theoretical)
- Digital signal processing and simulation (Matlab / python)
- Multi-physical system modeling (COMSOL)
- Mechanical physics and wave propagation in general
- Micromachining and transducer assembly

The student will be integrated into the GAUS ultrasound team, which includes 3 professors and a set of infrastructures unique in Canada (3D scanning vibrometer, ultrasound imaging systems, rapid prototyping, air-coupled probes). Stimulating environment guaranteed!

## Discipline(s) by sector

### Sciences naturelles et génie

Génie électrique et génie électronique,  
Génie mécanique

## Funding offered

Yes

The last update was on 22 June 2026. The University reserves the right to modify its projects without notice.