

# Numerical simulation of ultrasound for medical therapeutic applications

Record number : OPR-359

## Overview

### RESEARCH DIRECTION

Martin Brouillette, Professeur -  
Department of Mechanical Engineering

### ADMINISTRATIVE UNIT(S)

Faculté de génie  
Département de génie mécanique

### INFORMATION

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### LEVEL(S)

2e cycle  
3e cycle  
Stage postdoctoral

### LOCATION(S)

Campus principal

## Project Description

The project aims at the numerical simulation of ultrasound wave propagation in concentrators and waveguides used to produce high amplitude pressure pulses to treat calcified tissues. The project will involve the selection of the finite element simulation environment, the validation of the method by comparison with experimental results in simple configurations, and finally the study and optimization of clinically relevant configurations. The project will be performed in collaboration with SoundBite Medical which uses this technology to treat cardiovascular disease.

Starting date : August 2019

### Discipline(s) by sector

Sciences naturelles et génie

Génie mécanique

### Funding offered

Yes

\$ 20 000

The last update was on 13 March 2024. The University reserves the right to modify its projects without notice.