



PhD in  
Structural and Environmental Health Monitoring and Management SEHM2

Research project title

**ANALYSIS OF TECHNOLOGICAL ACCIDENTS  
TRIGGERED BY NATURAL EVENTS (NATECH) IN THE  
PERSPECTIVE OF CLIMATE CHANGE**

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## NATECH

Natural hazards triggering technological accidents. Accidents can be triggered by any kind of natural events, not only by natural disasters of high intensity.

## CLIMATE CHANGE AND NATURAL EVENTS

The proofs of climate change are unequivocal. Climate and weather-related events are growing worldwide both in frequency and magnitude.

## CHARACTERISATION OF NATURAL EVENTS

Identification of physical effects related to natural events impacting the industrial site. Quantitative modelling of these effects.

## CONSEQUENCES EVALUATION

Evaluation of most vulnerable equipment and definition of damage modalities. Assessment of possible technological scenarios.

## INSTABILITY OF SUBSTANCES

Thermal instability and reaction with water can cause degradation or unwanted reactions. These reactions can cause industrial accidents or escalate the consequences.

## POSSIBLE MULTIDISCIPLINARY COLLABORATIONS

### CHARACTERISATION OF NATURAL EVENTS

Identification of parameters for the characterization of natural events' intensity.  
Evaluation of the probability of occurrence of natural events as function of the magnitude and the location.

**Natural science**

### CONSEQUENCES EVALUATION

Identification of damage modalities of equipment.

**Mechanical engineering**

Identification of damage modalities of infrastructure inside and outside the industrial site.

**Civil and structural engineering**