SENSORS DESIGN AND SOFTWARE DEVELOPMENT FOR STRUCTURAL HEALTH MONITORING

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RESEARCH PROGRAM

Development of Structural Health Monitoring (SHM) tools:

• Design of piezoelectric sensors to increase the defects location resolution.

• Frequency-time scale analysis of signals.

• Image-processing algorithms to characterize the defects. Software tools to:

  ➤ Detect scattering patterns.

  ➤ Extract features and perform a cluster analysis.

  ➤ Implement machine learning algorithms.

• Prognosis and remaining useful life estimation.

MULTIDISCIPLINARY CONNECTIONS

SHM involves many research areas:

- Mechanical Eng.: modelling of mechanical waves propagation.

- Electronic Eng.: sensors design and signal processing.

- Computer Eng.: software tools.

- Artificial Intelligence: machine learning algorithms.