

Cofinanciado por:



UNIÃO EUROPEIA Fundo Europeu de Desenvolvimento Regional

| NAno-engineering of wid | e bandgap |
|---|---|
| Semiconductors using lo | n Beams (NASIB) |
| LISBOA-01-0145-FEDER-0 | 028011 |
| Understanding radiation effects in wide bandgap | |
| semiconductors and develo | opment of radiation |
| sensors | |
| Lisbon, Centre | |
| 03-05-2018 | |
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Partners:

IST-ID

INESC-MN

Universidade de Aveiro

Objectives:

The necessity of robust electronics and sensors working in extreme conditions is driving the research on finding alternatives to the ubiquitous silicon-based semiconductor devices. In particular, the development of radiation resistant semiconductors for radiation detectors and electronic circuits is of utmost importance for applications in space, accelerators (for research and health sector) or nuclear facilities. Group-III-nitrides are wide bandgap semiconductors which are considered remarkably robust (thermally and chemically) and radiation hard. After their success as base materials for blue light emitting diodes (LEDs) (Nobel Prize in Physics of 2014) they now excel in high power and high frequency applications as well as sensors.

This project aims at establishing a fundamental understanding of radiation effects in GaN and related alloys. This knowledge will then be applied for improving the efficiency of green LEDs and for the development of radiation sensors using ion beams for nano-engineering.

Results