# Maria SPIES – Doctoral Researcher

## EDUCATION

Oct 2019 — **Ph.D. in Nanophysics** Université de Grenoble, France.
Sept 2014 — **M.Sc. in Physics** at the HHU Düsseldorf, Germany.
Dec 2011 — **B.Sc. in Physics** at the New Mexico State University, Las Cruces, USA.
July 2008 — **Abitur** at Sportgymnasium Magdeburg, Germany.

## WORK EXPERIENCE

**Oct. 2016 – Nov 2019** — **Doctoral researcher** at *CEA -INAC and CNRS-Institute Neel*, Grenoble, France
- Nanophysics: correlated advanced characterization of heterostructured nano-scale group III-V photodetectors and emitters by microphotoluminesence, scanning and transmission electron microscopy, electrical characterization; device fabrication in clean room, simulations of optical properties with nextnano[3]
- Thesis title: "Correlated electro-optical and TEM studies on single III-N nanowire heterostructures"

**Feb – Aug 2016** — **Research Engineer** at *Groupe de Physique des Matériaux, Université de Rouen, Normandie*, Rouen, France
- laser wide angle atom probe tomography (APT) and laser LEAP high resolution APT on diamond nanotips, studying the possibility of sub-bandgap absorption

**Feb – Sept 2014** — **Reasearch Assistant** at *Max-Planck-Institut für Eisenforschung*, Düsseldorf, Germany
- APT, SEM, CL, EDX, EBDS, STEM imaging on semiconductor kesterite
- Thesis title: "Influence of growth conditions on the opto-electronic properties, microstructure and chemistry of $Cu_2ZnSnSe_4$ thin-films"

**June – Aug 2012** — **Research Assistant** at *Erasmus Medisch Centrum*, Rotterdam, Netherlands
- FFT analysis of ultrasound, photoacoustics response of lipid microbubbles with dyes attached to the shell, transducer recorded

**June – Aug 2011** — **Internship** at *Department of Electrical Engineering*, University of Nebraska-Lincoln, Lincoln, NE, USA
- Ellipsometry study of optical properties of sublimation-deposited epitaxial Graphene on SiC (3C, 4H), spectroscopic mapping

**Jan 2011 – May 2012** — **Research Assistant** at *Department of Physics*, New Mexico State University (NMSU), Las Cruces, NM, USA
- Ellipsometry studies of optical properties of thin films: $SrTiO_3$, NiPt, $LaAlO_3$

**May – Dec 2010** — **Research Assistant** at *Department of Astronomy*, NMSU, Las Cruces, NM, USA

## SKILLS

**Optical and material characterization**
- Electrical device characterization, TEM, SEM, Microphotoluminescence, FIB, Atom Probe Tomography, Ellipsometry, Cathodoluminescence

**Computer skills**
- Origin by OriginLab, Nextnano[3] QW device simulation, basic Matlab, Python and Fortran programming

**Clean room experience**
- Device design, SiN TEM grid fabrication, contacting of single nano-objects, electron beam lithography

## PUBLICATIONS & CONFERENCES

Author of 14 (5 first author) publications in peer-reviewed international journals.
Presenter of 6 talks at international conferences.

## ACCOMPLISHMENTS & AWARDS

Athletic Achievements (in swimming):
- University level (USA): Athletic scholarship at Division I swim team at NMSU (Aug 2008- May 2012)
  - 4x school record holder, 3x WAC Champion, Outstanding Swimmer 2009
- Nationwide (Germany): Junior National Team 2005, 2006

## LEISURE

Snowboarding, kitesurfing, swimming, hiking, drawing, painting. **Fluent in:** English, French, German.