

MADS NIBE LARSEN

Research Engineer - Newtec Engineering A/S

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SUMMARY

I am detail-oriented with an MSc in engineering and acquainted with a wide range of different techniques related to applied physics, well suited for developing and working with bleeding edge technology. Adept at hands-on laboratory work including i.a. hyperspectral imaging and processing, scanning probe techniques such as AFM and KPFM, micro fabrication, optical system design and laser systems. Experienced with working in an R&D laboratory environment from over two years of doing university projects at the Odense-based company, Newtec Engineering where I am currently employed. Acquired ability to communicate scientific knowledge to people of different knowledge levels from working as an instructor and as a supervisor on semester projects at university. Capable of getting acquainted with new knowledge and skills to solve the task at hand.

EDUCATION

MSc in Engineering - Physics and Technology

University of Southern Denmark

2019 - 2021

Odense, Denmark

Weighted Average Mark: 11.6/12

BSc in Engineering - Physics and Technology

University of Southern Denmark

2016 - 2019

Odense, Denmark

Weighted Average Mark: 11.5/12

DISSERTATION WORK

MSc Thesis

Improving Hyperspectral Thermography by Spectral Analysis

2021

- Image processing of hyperspectral thermal images
- Machine learning for material classification and temperature determination
- Fabry-Pérot Interferometry

BSc Thesis

Fabrication and Examination of Reference Sample for Kelvin Probe Force Microscopy

2019

- AFM based Scanning Probe Techniques
- Designing and Fabricating Micro-structures in a Clean Room Environment

ATTENDANCE AT CONFERENCES

- Presented 1-minute madness and poster about the finding of the BSc Thesis at **Opens Science Festival 2019** in the iNANO Auditorium at Aarhus University, Denmark
- Participated and presented a poster about Kelvin Probe Force Microscopy on Various Samples Containing Graphene at "**Carbonhagen 2019**" at Lundbeck Auditorium, University of Copenhagen, Denmark

COMPETENCES

My background in applied physics and engineering gives me the ability to work with project-oriented problem solving both independently and in interdisciplinary teams. Along with general engineering based competences, my degree in Physics and Technology gives me the ability to assess and select the best suited scientific methods and techniques for solving advanced and complex problems. I am capable of taking on many different challenges when working with the newest technology in an R&D environment. A selection of topics I have worked with during my degree in Physics and Technology is listed below.

Hyperspectral imaging systems	Optics		
Thermography	Image processing		
Optical System Design	Acoustics		
Experimental Physics	Laser Physics		
Computational Physics	Programming		
Micro-fabrication	Sensor Technology		
Electrical Engineering	Data Acquisition		
Signal Processing	Quantum Mechanics		
Graphene Transfer and Characterization			
AFM	KPFM	STM	Statistics

SOFTWARE PROFICIENCY

Python	●●●●●
MATLAB	●●●●●
COMSOL Multiphysics	●●●●●
Zemax Optic Studio	●●●●●
Adobe Photoshop	●●●●●
Adobe Illustrator	●●●●●
Fusion 360	●●●●●
C++	●●●●●
Microsoft Office	●●●●●

PUBLICATIONS

Research Paper

[Surface temperature determination using long range thermal emission spectroscopy based on a first order scanning Fabry-Pérot interferometer](#)

📅 Accepted Nov 2021

🔗 <https://doi.org/10.1364/OE.441798>

👤 Anders Løchte Jørgensen, Mads Nibe Larsen, Victor Petrunin, Jakob Kjelstrup-Hansen, Bjarke Jørgensen

Published in Optics Express, Volume 30, Issue 2, Page 2186-2196, January 2022

Research Paper

[Work function difference of naphthyl end-capped oligothiophene in different crystal alignments studied by Kelvin probe force microscopy](#)

📅 Accepted Dec 2020

🔗 <https://doi.org/10.1016/j.orgel.2020.106060>

👤 Mads Nibe Larsen, Mads Svanborg Peters, Rodrigo Lemos-Silva, Demetrio A. Da Silva Filho, Bjarke Jørgensen, Ole Albrektsen, Jakob Kjelstrup-Hansen

Published in Organic Electronics, Volume 89, February 2021, 106060

WORK EXPERIENCE

Research Engineer

[Newtec Engineering A/S](#)

📅 Jul 2021 - Present

📍 Odense, Denmark

- Working as a part in the R&D department
- Experienced in working with hyperspectral imaging and analysis

Project Supervisor

[Mads Clausen Institute for Product Innovation, University of Southern Denmark](#)

📅 Sep 2019 - Jan 2020 & Sep 2020 - Jan 2021

📍 Odense, Denmark

- Supervised 3rd semester groups with their semester project
- Designing and fabrication of Anisotropic Magneto-resistive (AMR) sensor in a clean room environment for sensing of magnetic fields
- Communication of technical knowledge to student on another academic level than myself
- Help and guidance - both in the practical and the academic writing part of the projects

Course Instructor

[Mads Clausen Institute for Product Innovation, University of Southern Denmark](#)

📅 Sep 2018 - Jan 2019 & Sep 2019 - Jan 2020

📍 Odense, Denmark

- Helped students with their theoretical physics problems introduced in their lectures

Freelance Marketing Coordinator

[Geveko Markings](#)

📅 May 2015 - Mar 2019

📍 Longelse, Denmark

- Assisted the marketing department with various tasks
- Updated marketing material such as image brochures, price lists, websites ect.

LANGUAGES

Danish



English



PERSONAL STRENGTHS

Hard-working

Adaptability

Enjoy Learning Something New

Responsibility

I Like a Challenge

Keen Eye for Details

Full of initiative

Team Player

Structured

Flexibility

Does not compromise on quality

Drive

Reliability

Conscientious

Systematic

Committed

Well-organized

MOST PROUD OF



Student of the Year in High School

Teachers and fellow students awarded me with the title of Student of the Year as well as with *Nordea-fondens Uddannelsespris*

HOBBIES



Model/Miniature Painting

I am patient and detail oriented when working with my scale model and miniature hobby



Running

I keep myself in good shape by running regularly



Abstract 3D Art

I enjoy expressing myself using Cinema 4D to create art works



Photography

Everywhere I go, I bring my camera to capture beautiful images of the world around me