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EDUCATION **imec-KU Leuven**, Heverlee, Belgium 2021–Present

- Doctoral student studying plasma-resist interactions of ultrathin resists relevant for EUV lithography and pattern transfer processes.

**KTH Royal Institute of Technology**, Stockholm, Sweden 2019–2021

- Masters in Nanotechnology, Nanoelectronics Track
- GPA: **4.9/5** – via 120 credits. [Scale: A=5, B=4.5, C=4, D=3.5, E=3, F=fail]

**Indian Institute of Science (IISc)**, Bengaluru, India. 2015–2019

- Bachelor in Science (Material Science and Engineering Major)
- GPA: **6.5/8** – via 131 credits.

#### PUBLICATIONS

1. Shikhar Arvind, Esben W. Larsen, Philippe Bezar, John Petersen, and Stefan De Gendt. Impact of vacuum ultraviolet photons on ultrathin polymethylmethacrylate during plasma etching. *Journal of Vacuum Science & Technology A*, 42(3):033009, May 2024. ISSN 0734-2101, 1520-8559. doi:10.1116/6.0003541
2. Kevin M. Dorney, Fabian Holzmeier, Nicola N. Kissoon, Esben W. Larsen, Dharendra P. Singh, Shikhar Arvind, Sayantani Santra, Roberto Fallica, Marina Y. Timmermans, Ivan Pollentier, Igor A. Makhotkin, Vicky Philipsen, Stefan De Gendt, Claudia Fleischmann, Paul A. W. Van Der Heide, and John S. Petersen. Actinic inspection of the extreme ultraviolet optical parameters of lithographic materials enabled by a table-top, coherent extreme ultraviolet source. *Journal of Micro/Nanopatterning, Materials, and Metrology*, 23(4). doi:10.1117/1.JMM.23.4.041406
3. Laura Galleni, Arne Meulemans, Faegheh S. Sajjadian, Dharendra P. Singh, Shikhar Arvind, Kevin M. Dorney, Thierry Conard, Gabriele D'Avino, Geoffrey Poutois, Daniel Escudero, and Michiel J. van Setten. Peak Broadening in Photoelectron Spectroscopy of Amorphous Polymers: The Leading Role of the Electrostatic Landscape. *The Journal of Physical Chemistry Letters*, 15(3):834–839, Jan 2024. doi:10.1021/acs.jpcclett.3c02640
4. Kevin Dorney, Nicola N. Kissoon, Fabian Holzmeier, Esben W. Larsen, Dharendra P. Singh, Shikhar Arvind, Sayantani Santra, Roberto Fallica, Igor Makhotkin, Vicky Philipsen, Stefan De Gendt, Claudia Fleischmann, Paul A. W. Van Der Heide, and John S. Petersen. Actinic inspection of the EUV optical parameters of lithographic materials with lab-based radiometry and reflectometry. In *Optical and EUV Nanolithography XXXVI*, page 62. SPIE, April 2023. doi:10.1117/12.2658359

#### EXPERIENCE

- **Investigation of GaN based HEMTs for power electronic applications**  
[Master's Thesis] January 2021 - June 2021  
RISE Research Institutes of Sweden, Kista, Stockholm, Sweden  
**Supervisor:** *Dr. Qin Wang*  
The AlGaN (Aluminium Gallium Nitride) /GaN (Gallium Nitride) HEMTs (High

Electron Mobility Transistors) for power electronic applications will be focused in this project. As known, research on GaN based power devices have revealed their better efficiency compared to Si power devices, however, a limitation of GaN HEMTs is their low current rating. The master's thesis will involve in the device design and characterization for different types of the HEMTs.

- **ASML Best of Tech Business Course** April 2021  
Attendee of Best of Tech Business Course 2021 organised by ASML. The online event introduced semiconductor manufacturing technology and the skills needed to work at the leading-edge tech company. Students worked together on case studies, joined Q&As, listened to presentations and spent time networking. The selection was 2 round process including a video interview.
- **ZEISS Autumn School of Semiconductor Optics** September 2020  
Attendee of the ZEISS online autumn school. It included talks by industry leaders on the photolithography fundamentals, High-NA EUV lithography, photomasks for EUV lithography, and metrology of semiconductor optics.
- **Encapsulation of Perovskite solar cells (PSC) [Bachelor's Thesis]** July 2018 - Dec 2018  
Institute of Microstructure, Karlsruhe Institute of Technology, Germany.  
**Supervisor :** *Dr. Ulrich W. Paetzold*  
PSC have made rapid progress in terms of efficiency and manufacturing methods in the past decade with the reported efficiencies over 20 %. Whilst this is great a thrust for the commercialization of PSC, there are still some major problems with regards to stability of the cells. Encapsulation is one of the methods to improve the stability and lifetime of PSC and this project involved testing different methods and encapsulants for the optimal encapsulation strategy for PSC. A baseline stability of over 100 h was obtained under accelerated climatic conditions compared to 1 h of bare cells.
- **Synthesis of Lead Telluride(PbTe) nanotubes** May 2017– July 2017  
Materials Research Center, Indian Institute of Science, Bengaluru, India.  
**Supervisor :** *Prof. N Ravishankar*  
PbTe is a thermoelectric material which has been shown to convert thermal energy with reasonable efficiency. Different methods are being employed to increase this efficiency and one such method is nanostructuring PbTe. In this project, we aimed at economical methods to synthesize PbTe nanotubes and understand its growth mechanism. Solvothermal techniques were used to synthesize the nanotubes and were further analysed using transmission electron microscope (TEM).
- **Voluntary work** July 2017  
Bijapur, Karnataka, India  
In the present day and age, the mentality of the youth of India is primarily constricted to pursue medicine or engineering. This is quelling the research potential from this huge population of youth in India. To help this situation I volunteered to deliver talks and speeches at various schools in the city of Bijapur, Karnataka, India to increase the awareness among students and adults on pursuing “**Research as a career in India**” .
- **NoteBook Drive**  
Indian Institue of Science(IISc), Bengaluru, Karnataka, India  
Facilitator, NoteBook Drive (NBD) Programme, IISc : This is a student run voluntary organization to promote science education among students of the underprivileged sections of society in and around Bengaluru by creating awareness and motivating high school students towards higher education.

HONORS AND  
AWARDS

- Recipient of the KTH Scholarship for Master students.
- Awarded the Sitaram Jindal Foundation Medal for top academic performance in the Materials Science and Engineering track during Bachelor Studies.
- Fellow of KVPY (Kishore Vaigyanik Protsahan Yojana), a National Program of Fellowship in Basic Sciences, initiated and funded by the Department of Science and Technology, Government of India, to attract highly motivated students for pursuing basic science courses and research career in science.

LANGUAGES English, Hindi, Kannada.

REFERENCES Available on request.