

Achintya Amol Paradkar

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EDUCATION

Chalmers University	PhD in Quantum Magnetomechanics – Quantum Sensing	Sept 2020 – Present
Relevant Courses	Superconductivity and Low Temperature Physics, Superconducting Devices: Fundamentals and Applications, Quantum Optics and Quantum Information	
KU Leuven	Master of Nanoscience, Nanotechnology & Nanoengineering (cum laude)	Sept 2018 – Sept 2020
Relevant Courses	Quantum Physics, Advanced Nanoelectronic Components, Mesoscopic Physics, Optical Properties of Solids, Electronic Transport, Practical Design for Nanotechnology	
University of Pune	Bachelor of Mechanical Engineering (B.E.) 70.3% (Distinction)	Aug 2010 – Jul 2014
Relevant Courses	Applied Sciences, Material Science, Mechanical System Design, Mechatronics, Electrical Technology, CAD CAM Automation, Robotics,	
MOOC on EdX	Introduction to Hardware of Quantum Computer – Delftx, Fundamentals of Nanoelectronics – PurdueX	

WORK EXPERIENCE

QTL-MC2, Chalmers University, Sweden – Quantum technology research laboratory	(WACQT funded)
Doctoral Researcher – Macroscopic quantum experiments on levitating micro-particles	Sept 2020 – Till Date
<ul style="list-style-type: none">• Investigate quantum regime in macroscopic systems by ground state cooling and coupling with S.C. circuits• Achieve levitation of micrometer-sized particles at 10 mK dilution refrigerator using Meissner state• Couple the levitating particles to superconducting qubits or LC resonator to bring them into quantum regime• Develop technology for high-sensitivity quantum sensors for gravimetry and ultra-small field detection	
IMEC, Leuven – International R&D and innovation hub, active in the fields of nanoelectronics and digital technologies	
Master Thesis – Magnetoelectric devices for beyond CMOS applications	Sept 2019 – Aug 2020
<ul style="list-style-type: none">• Explore and evaluate the efficiency of the magnetoelectric effect in piezoelectric/magnetic devices• Work in cleanroom to develop magnetoelectric devices using different piezoelectric/magnetic systems• Characterize the magnetoelectric coupling in both static (DC) and RF regime for various thin film devices	
Student Intern – Modification and control of RF switch for qubit read-out	Jun 2019 – Aug 2019
<ul style="list-style-type: none">• To modify and optimize a commercial RF switch to measure resonator parameters for characterizing qubits• Developed python codes and necessary components for interfacing the RF switches to the switch matrix	
Student Intern – Design of sample holders for superconducting qubits	Feb 2019 – May 2019
<ul style="list-style-type: none">• Designed resonator and qubit sample holder, and supporting components for superconducting qubits• Achieved magnetic shielding and electromagnetic isolation for increasing the qubit coherence time• Performed thermal and stress analysis, created CAD models and 2D drawings for manufacturing	
Tata Technologies Ltd – Global engineering organization specialized in design solutions & digital manufacturing services	
Design Engineer	Jul 2014 – Sept 2018
<ul style="list-style-type: none">• Skeleton Modelling and Parametric Top-down designing on various CAD modelling software• Learnt Design Thinking at <i>Srujan Lab</i> for optimizing cost and energy efficiency of commercial products• Worked with OEMs like Boeing, Jaguar Land Rover, PSA Peugeot, Air India, Tata Hitachi, Tata Motors	

PROJECT ACTIVITIES

Effectiveness of Nanoparticles vs CNT based vibration damping in MEMS structures Jul 2015 – May 2016
Affiliation – Cereble Robotics and University Grant Commission

- Designed and tested a prototype of hollow MEMS cantilever filled with metal nanoparticles and CNT
- Maximum damping ratio of up to 16 was achieved at 75% packing ratio using aluminum oxide nanoparticles

Design and Development of Compliant Amplifier based on Flexure Mechanism Jul 2013 – May 2014
Affiliation – Department of Science and Technology, HRD Ministry of India

- Designed, manufactured, and tested a prototype of MEMS amplifier to actuate ISRO's Linear Compressor
 - Compliant linear 1:7 amplification with zero hysteresis after testing on dSPACE Microcontroller
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KEY SKILLS

CAD Packages - Creo, CATIA, UG NX, Inventor, Solidworks
CAE Packages - ANSYS, Hypermesh, SimScale, COMSOL
Programming - C, MATLAB, VBA, Python

PUBLICATIONS AND PROCEEDINGS

- Dr. S.P. Deshmukh, A. Paradkar, U. Bhamare, **Design and Development of Linear Compliant Amplifier Based on Flexure Mechanism**, *International Conference on Advances in Thermal System, Materials and Design Engineering 2017*, Elsevier Proceedings SSRN 3101407 <http://ssrn.com/abstract=3101407>
 - A. Paradkar, V. Joshi, **A Report on Quantum Computing**, *International Journal of Students Research in Technology & Management* Vol. 1 (06), October – December 2013, ISSN 2321-2543, pg. 627-634 <http://giapjournals.com/index.php/ijstrm/article/view/108/102>
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EXTRA CURRICULAR ACTIVITIES

- Chief Editor of College Magazine, *MOSAIC 2014*
 - Secretary of Mechanical Engineering Student Association AY 2012-13
 - Guest talks on career prospects and mentoring to engineering students at DYPCOE and NBMCOE
 - Organized *Backlog Mentoring Program* for academically underperforming students at SAOE, Pune
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REFERENCES

- **Dr. Anton Potocnik** - Summer internship supervisor
Position : R&D Engineer, IMEC
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 - **Dr. Hasnain Ahmad** - Master thesis supervisor
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