



sonus
Microsystems

Sonus Microsystems Inc.
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sonusmicrosystems.com

MEMS Design Engineer

Who We Are:

Sonus Microsystems is developing a novel type of MEMS sensor that can disrupt healthcare diagnosis and industrial testing. Our proprietary technology involves fabrication of polymer-based Capacitive Micromachined Ultrasound Transducers (polyCMUTs), which have unique characteristics that enables the use of ultrasound in applications not previously possible with piezoelectric or silicon-based transducers. Our technology has applications in multiple markets, including healthcare, non-destructive testing and consumer electronics products.

Who You Are:

We are seeking highly technical and motivated engineers or scientists with entrepreneurial mindset, passion for impactful work and strong MEMS background to join our growing team.

In this role you will be responsible for the design, development, optimization, and manufacturing of novel MEMS-based ultrasound transducers using polymer materials.

Responsibilities:

- Support the product development of various MEMS-based ultrasound transducers, including design/simulation and process development
- Handle MEMS design software such as L-edit, KLayout, Clewin or similar
- Improve designs of transducers using analytical and FEM models
- Read and analyze scientific articles and patents
- Identifying patentable ideas and design improvements.
- Conduct basic microfabrication activities, including:
 - Spin coating of photoresist, baking, and development
 - UV exposure in mask-aligners or maskless lithography systems
 - PVD tools (e.g., e-beam evaporation, sputtering systems)
 - Usage of inspection tools like profilometers and interferometers
- Perform electromechanical and acoustic characterization activities, including:
 - Electrical tests (using impedance analyzers, vector network analyzers, etc)
 - Vibration characterization (using laser Doppler vibrometer)
- Data analysis and signal processing using MATLAB or Octave
- Maintain detailed records of experiments.
- Prepare reports and technical presentations.
- Customer interaction, requirement gathering and architecting novel solutions for partners.
- Regular interaction with materials and service suppliers
- Collaborate with a diverse team of technicians, engineers, scientists and executives.

Requirements:

- Eligibility to work in Canada
- Master's or Ph.D. in a field of Science or Engineering
- Experience with design of MEMS devices and process fundamentals
- Good knowledge of the microfabrication process of MEMS devices in a cleanroom environment
- Proficiency with MEMS design tools such as CoventorWare, L-Edit, and 3D CAD software
- Experience with finite element analysis (FEM) of MEMS devices using Comsol or ANSYS
- Experience with SPICE simulators
- Experience with analytical models of MEMS devices
- Experience using MATLAB or Octave for signal processing and data analysis
- Experience in design of experiments (DOEs)
- Excellent organizational and documentation skills
- Proficient English verbal and written communication skills
- Ability to work collaboratively in a team-based environment
- Eagerness to learn and apply new skills, procedures, and approaches
- Comfortable working in a startup environment doing multi-tasking

Nice to Haves:

- Experience in multiple transducer types (capacitive, piezoelectric, piezo resistive)
- Knowledge of ultrasound imaging physics
- Experience with ultrasound beamforming, image formation, testing, etc.
- Knowledge in Capacitive Micromachined Ultrasound Transducers (CMUT)
- Acoustical characterization using hydrophones and water tanks
- Experience with standard metrology tools: SEM, profilometry, optical microscopy.
- Basic understanding of analog circuits and PCB design
- Familiarity with ultrasound simulation packages such as Field II or k-wave
- Experience with programable ultrasound systems such as Verasonics Ultrasound Research platform, Teleded, etc
- Experience with LabView
- Experience in analyzing patents and identifying areas of opportunities.

Please apply with a cover letter and Curriculum vitae.

LinkedIn job posting: <https://www.linkedin.com/jobs/view/3708924124/>