

Ashish Pokharel, M.S., E.I.T

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Mechanical engineer with 5+ years of diverse experience in mechanical system design, rapid prototyping, and biomedical engineering research and development. Committed to creative problem solving of novel problems.

TECHNICAL SKILLS

CAD/CAM: SolidWorks, MasterCam, 3D Experience, Onshape, Rapidform.
Simulations: SolidWorks Flowsim, ANSYS, Fluent, Hypermesh, FEA
Prototyping: CNC Milling (Haas), 3D Printing (SLA/FDM), Laser-cutting, Turning (lathe), Machine Shop Tools
Quality: DHF, WI, IQOQPQ, Batch Records, Protocols, Reports, Technical Documentation, GDP, ISO:13485

PROFESSIONAL EXPERIENCE

Mechanical Engineer - *EPIBONE INC.* *January 2020 - April 2024*

- Developed EpiBone's 2 tissue maturation systems from concept to use in cGMP production of cartilage grafts.
- Collaborated in a diverse team to successfully grow bio-engineered cartilage and achieved FDA IND approval for a first-in-human phase 1/2b clinical trial for human in vivo implantations.
- Led the design, prototype, and testing of electromechanical cartilage loaders and perfusion bioreactor systems.
- Streamlined loader design and material selection to yield a 50% increase in the precision of cartilage loading.
- Designed a signal box to house critical hardware in loader assembly, reducing footprint and increasing usable loaders per incubator throughput, each by 50% while maintaining quality control as per ISO:13485.
- Utilized stack-up tolerance analysis to decrease parts per bioreactor assembly by 50% and assembly time by 50%.
- Developed a versatile stage for fixturing stock in CNC operations using pneumatic systems, achieving a -30mmHg vacuum and reducing the milling scrap rate by 50%.
- Mentored junior engineers in 3D modeling, DFMA, CNC milling, SLA 3D printing, laser cutting, and pneumatics.

Mechanical Design Engineer - *EPIBONE INC.* *September 2019 - December 2019*

- Generated CAD designs, g-code, 3D print files, and bioreactor components to fabricate patient-specific jawbone grafts for the first-in-human phase 1/2a clinical trials to implant 6 patients with tissue-engineered bone successfully.
- Tested and validated sheet metal bone graft seeding systems to reduce tube kinking by 30% per run.
- Designed, optimized, and 3D printed molds to cast silicone inserts resulting in a 50% reduction in scrap rate.

Mechanical Engineer - *TOTEM POWER* *July 2017 - January 2018*

- Used SolidWorks to generate 2D and 3D CAD of a wireless EV charging tower.
- Revised tower compartments for placement of vents, cable holes, and racks to optimize cooling of internal electronics.
- Modeled flow and temperature gradients to determine the cooling effects of 200 CMF fans using ANSYS, and Fluent.
- Used simulation data to locate the optimal positions of fans and heat-generating units such as batteries and modules.
- Achieved an operable temperature of less than 50°C throughout three different versions of the tower system.

EDUCATION, CERTIFICATIONS, PATENTS

Master of Mechanical Engineering:	<i>The Cooper Union, September 2017 - September 2019</i>
Bachelor of Mechanical Engineering:	<i>The Cooper Union, September 2013 - May 2017</i>
Engineer In Training (E.I.T):	<i>NCEES, January 2018</i>
Provisional Patent (Co-Inventor):	<i>Bioreactor system for maturation and maintenance of osteochondral tissue Bioengineered cartilage for rhinoplasty composition, method, and apparatus</i>