Continuous Glucose Monitor Sensor Coating Machine

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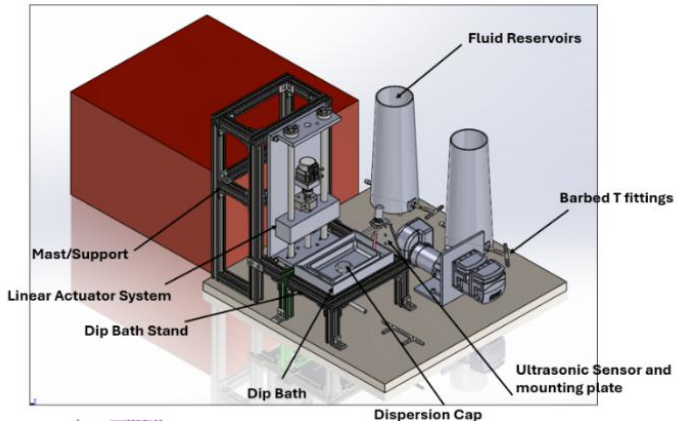
PROJECT BACKGROUND & DESIGN GOAL:

Ascential Technologies request an **automated dip coater system for continuous glucose monitoring sensor tips.** The system will demonstrate precision motion control, fluid handling, and process consistency—key elements of Ascential's large-scale automation solutions. The dipping station should be modular, self-contained, and configurable for different process parameters and fluid viscosities, allowing it to be adapted for future demonstration and development needs.

DESIGN OUTCOMES:

The design consists of a linear actuator system, a fluid circulation system, a model sensor tip carriage, and an electrical component box with PLC and other automated control components.



CAD model of integrated coating system

DESIGN CONSTRAINTS:

- **Size** Must fit withing .22 m3 cubed excluding electrical box
- **Precision** Dip accuracy within 1.3 mm
- **Control** Adjustable fluid circulation to allow for multiple viscosities
- **Force** Design must support load of minimum 1 kg
- **Configurability** Ajustable parameters for machine versatility