



WE'RE HIRING

Physical Chemist – Electrochemical Interfaces

LOCATION	mHUB, Chicago, IL on-site, with occasional travel to nearby partner facilities
START DATE	Jan 1, 2027
COMPENSATION	Competitive salary plus equity
ELIGIBILITY	PhD in physical chemistry, chemical physics, materials science, chemical engineering, or related; senior postdoc to mid-career preferred

About Fluid Reality

Fluid Reality builds hardware and control systems that allow human teleoperators to feel what robots feel through gloves and controllers at high resolution. Our advanced haptic feedback actuators use electroosmosis to directly transform electrical energy into mechanical work (pressure and flow). It's a fundamentally new actuation method, unlike electric motors, piezoelectrics, or pneumatics.

We spun out of patented Carnegie Mellon University research at the Future Interfaces Group, and are the first to bring this technology to market. A stack 500 microns thick generates tens of kPa and millimeter-scale displacement at ~10 mW per pixel. We are a small team of PhDs and engineers at **mHUB**, Chicago's hardtech innovation center and one of TIME's Best Incubators & Accelerators of 2026, where we work within an extensive prototyping and testing lab among a thriving community of 300+ hardtech startups and businesses. We manufacture in house and ship hardware globally, and we are moving into a multi-year, well-funded product program.

The Opportunity

This role is where research and advanced technology meets commercial application in a fast moving and rapidly growing robotics industry. The work you'll be doing is beyond the edge of published research. A high electric field across a porous membrane drags counter-ions, and with them the bulk fluid, with no moving parts. The physics works, and the challenge is to make sure it is fully understood. We are hiring the scientist who figures out what is happening at the molecular scale solid-liquid interface and in the fluid, and turns it into material, surface, and process decisions to build a new class of actuators.

What You'll Do

- Turn unknowns into actionable knowledge through designing and conducting experiments
- Propose and test material changes including surface treatments, films, fluid formulations, etc.

- Characterize and stress test production electroosmotic actuators, performing root cause analysis
- Own relationships with external analytical and metrology facilities, specify samples, perform or procure specialized tests, and interpret results
- Contribute or lead SBIR grants and patent writing
- Extend our electrical and physical device model as mechanisms are confirmed
- Help the team implement process, material, and design changes based on your work.

Qualifications

- PhD in physical chemistry, chemical physics, materials science, chemical engineering, or closely related, with research centered on **interfaces, electrolytes, or electrochemical systems**
- **A maker's record:** you have synthesized, deposited, formulated, or built something new, and you can show the evidence that it worked
- Measurement experience: spectroscopy, scattering, electrochemical, or surface-science techniques
- Hands-on experimentation beyond standard equipment; bonus for DIY instrumentation
- AI coding and agents: Especially background research, test scripts, plots, and presentation.
- Comfort being the resident expert on a fast moving startup team of other experts.

BONUS:

- Battery, supercapacitor, or electrolytic capacitor development, especially electrolytes, passivation, interphase chemistry, or electrode chemistry
- Non-aqueous electrolytes and solvents; dry-box discipline
- Electrokinetics: electroosmosis, streaming potential, zeta potential

What You'll Gain

- The chance to be an early author of the chemistry of a new actuator class
- Ownership: working directly with the CTO, and a hand in shaping the core-tech group you'll help lead
- A product that exists and a multi-year budget behind the science
- Collaboration and mentorship from advisors with decades in closely related fields
- Life in Chicago: a world-class city on the lake, without coastal costs

Application Process

Please send the following to hiring@fluidreality.com:

- CV / résumé with links to publications or technical reports
- **One thing you made that you're proud of:** a figure, a paper, a video, or a story about something you built, what tried to kill it, and what you changed
- Availability and preferred start date