

Interview with Gabrielle Abizeid



Gabrielle Abizeid
(ChE BE '17) CEO &
Founder of NanoSieve

How are you, Gabrielle?

Very busy (in a good way)! I've been juggling investor meetings and pitches, conversations with potential customers for pilot projects, and deep R&D meetings as we push forward on our next prototype. It's a fast-moving phase for us—and I'm grateful for the momentum.

Tell us a little about your startup and your current role.

I'm the Founder & CEO of NanoSieve, a startup developing a disruptive gas safety technology—one that doesn't just detect gas leaks, but actually responds in real time to prevent them from escalating. Instead of relying solely on alarms and human intervention, our system automatically reduces gas concentrations before they reach flammable or toxic levels—helping prevent fires, explosions, property damages, and serious health risks.

We're based in Miami, incorporated in Delaware, and currently transitioning from prototype to early deployment. I lead our product strategy, investor engagement, and customer development efforts.

We recently reached Technology Readiness Level 7 (TRL7) after successful testing in a real-world environment—specifically at The Combustion & Catalysis Lab at CCNY's Grove School of Engineering. Huge thanks to Professor Marco Castaldi, who provided access to the lab, and Professor Gabriel Tardos, who offered key support on modeling and chemical engineering design. The work was funded through a U.S. Air Force AFWERX STTR Phase I Award, and we now have a signed customer memorandum with the Air Force focused on improving gas safety for e-bike storage—a critical emerging risk area. NanoSieve exists to close a critical gap: today's gas detectors can alert, but they can't act. We're building the technology that can.

How did it all start?

NanoSieve started with a problem I couldn't ignore. While working at Con Edison, I responded to natural gas leak incidents and saw the same dangerous cycle over and over: sensors would beep, people would evacuate, but the gas kept leaking. By the time the fire department or utility crews arrived, the concentration could already be at flammable or toxic levels. The delay between detection and response was a clear safety gap—and I couldn't stop thinking about it.

As a chemical engineer, I went straight to the fundamentals—mass balances, differential equations, gas-phase transport—to ask a better question: What if we could reduce the gas concentration in real time, before reaching flammable or toxic levels? I pulled from my research under Professor Allan Hatton at MIT, where I worked on materials for gas separation applications. That foundation helped me evaluate which materials could realistically perform under real leak conditions.

Once the models started showing it could actually work, I filed the patents—and voilà, here we are. When I shared the idea with a firefighter, he said to me, "If you build this, you'll help to save lives." That was the moment I knew I had to try to take it to market. NanoSieve was built out of necessity, engineered from first principles, and now we're bringing it to life.

What's your next goal?

We're currently engaging potential pilot customers across several use cases—not just for natural gas, but also for hydrogen, ammonia, carbon monoxide, and refrigerants. These gases show up in everything from residential & commercial settings to industrial safety (data centers, underground infrastructure, hydrogen applications, etc.), and we're building for those real-world challenges.

We'll also develop a dedicated prototype for e-bike gas safety in collaboration with the U.S. Air Force, and working to form strategic partnerships with safety and sensor companies to help integrate our technology into homes, buildings, and infrastructure. At the same time, we're actively raising our \$2.5M seed round to support continued R&D, team growth, and commercial deployment.

Any advice for undergraduate students who want to become entrepreneurs?

Start before you feel ready. Focus on solving real problems—especially the ones that keep you up at night. And surround yourself with people who challenge you but also believe in your vision. I wouldn't have gotten here without professors and mentors at CCNY who encouraged me to think boldly and back it up with science and engineering.

Anything else you'd like to share?

Representation matters—especially in deep tech. As a woman founder in engineering, I've learned to trust my instincts and speak up, even when I'm the only one in the room. You don't need to fit a mold to build something meaningful. Keep going.