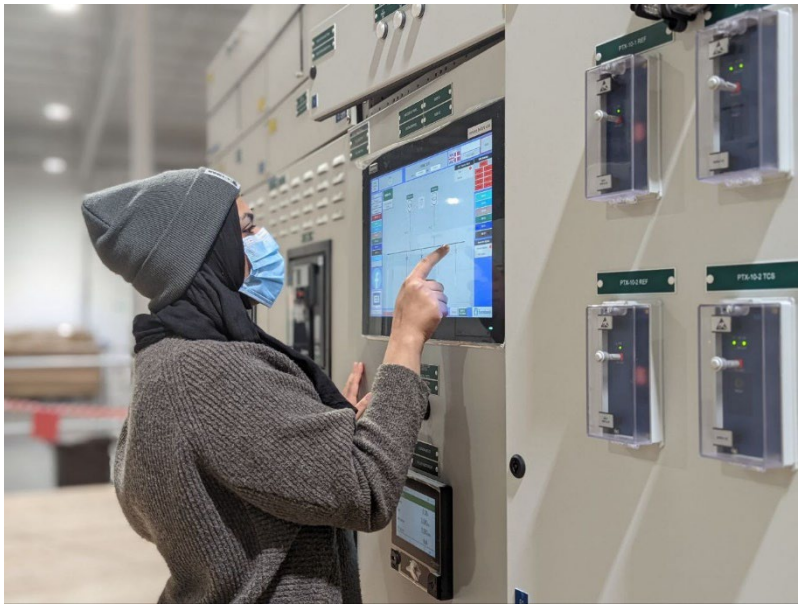

To celebrate International Women in Engineering Day, Thermo Systems wants to share an inspiring Q&A with one of our talented female engineers, Saneela Rabbani. Saneela is a Lead Control Systems Engineer for Thermo Systems, serving our clients in Europe. Read about Saneela's journey below…

Q: How or why did you choose engineering as a career path/ study?

A: Although I loved helping my dad take apart, assemble, and build any and everything, engineering was never a career path I considered growing up. By chance, my zoned high school was a vocational high school, and I was enrolled in the Robotics program. I discovered I enjoyed building robots with a team throughout high school, competing in robotics championships, and teaching robotics to young children in afterschool programs. My high school teacher, Mr. Zainule, felt I would make a great engineer, and he spoke to my mom and me about it. I wasn't convinced and applied to several CUNY schools as an English major and hesitantly to Vaughn College of Aeronautics and Engineering upon my parents' persistent requests. When I was accepted to Vaughn College, my mom received the call and was told that I had received several scholarships and wouldn't have to pay to attend the college. My parents convinced me to try it for a year and see how it went. I started at Vaughn college and never looked back. I was fortunate I had the opportunity to continue competing in robotics championships, build UAVs, continue teaching afterschool robotics programs, and interning at several cool places, one of my favorites being at the Department of Energy's High Flux Isotope Reactor. Throughout my time in college, I received so much support from my parents, Vaughn College, and the staff. I was encouraged to publish my work and present my degree project at several conferences. The cumulation of all the support I received helped me stay in engineering and pursue a career after finishing my studies.

Q: What inspires you about Engineering?

A: I think engineering is such a fundamental part of an evolving society. So many of the things we use daily are a by-product of engineering. I can't look at things without seeing the engineering behind them. I had a very one-dimensional view of engineering when I was younger. I now know that there are so many different engineering disciplines in so many industries that impact people's lives daily, and I love being part of that. There is so much creativity and science involved in engineering, and no two days are the same.

Q: What challenges do women face in the Engineering professions/academia?

A: I wish I could say that women do not face any challenges, sexism, or misogyny in academia or in the engineering profession. But the reality is that we do. During my freshman year, our cohort of Mechatronics Engineering consisted of two women; by my sophomore year, I was the only one in our cohort. It was incredibly lonely and difficult to stand up for myself at times. "Jokes" which were, in truth, misogynistic comments would be made and as a woman, you end up sitting through many uncomfortable comments where you are reduced to an object. When I would speak to the only female college professor, I had regarding this, she would say things have improved significantly over the years since she has been practicing, that fewer students challenge her qualifications or refuse to be taught by a woman. It was sad to hear about her experiences. Once I started working, I felt my share of challenges in the professional world. I have been on job sites where I have been sexualized, where I have been mocked, where I have been told to let the men do their jobs and to sit back. I was once hired as an engineer and only given admin work, and when I questioned it, was told that someone like me would make a better administrator than an engineer.

I used to spend a lot of time trying to prove my worth as a visibly Muslim, South Asian Female engineer. I felt that I had to work so much harder than many of the men on the job who delivered half of what I did simply because of who I was and what I looked like. Part of that was an internal struggle because of how alienated I felt, and part of it was because colleagues have challenged me in so many ways that my male colleagues were never challenged.

Another major challenge is not seeing someone who looks like you in positions you wish to be in. I only had one female engineering professor. I've only had one female engineering manager to date. There aren't many women in senior engineering positions or as many powerful decision-making positions. It can be daunting to want to be in a role that you have not seen someone like yourself in. It can also be frustrating when people in decision-making positions cannot relate to you.

Knowing other women and men will stand up with you against such things is helpful. I was part of the Society of Women Engineers chapter in college, and I am grateful and excited that we have launched the Women in Automation (WIA) Group at Thermo Systems because it provides the space necessary to hold these conversations. The way things are now versus when I started as an engineering student a decade ago has improved significantly. It feels like a win in so many ways, but how can it be a win when these things shouldn't have ever happened to begin with? We still have such a long way to go in identifying these behaviors, calling them out for what they are, holding people accountable, and refusing to allow and tolerate such behavior.

Q: What is the most exciting thing about your job?

A: As the Lead Control Systems Engineer at Thermo Systems, I find the most exciting part about my job is that I am challenged regularly. Every time I start to get comfortable, I'm faced with a new industry, a new client, a new piece of technology, etc., that forces me to let go of that comfort and grow as an engineer. During my time at Thermo Systems, I also had some exciting opportunities to travel for work. Recently, I traveled to Ireland on three separate occasions for Factory Witness Tests. Being in a foreign country, meeting new people, and testing equipment per local standards were exciting and challenging. I bonded with Thermo colleagues on these trips and developed relationships with others in the industry.

Q: What does a typical day in your job involve?

A: One of the things I love most about my work is that there isn't really a typical day in the job. Most days are so different from each other. One day you might be building graphics and writing PLC code, another day, you're on-site commissioning a panel, and another day you might be writing documentation. There is so much variety to the work and the clients, and that keeps things exciting. The one consistency with my day is that I try to start each day with a list of action items, identifying priorities and starting with them.

Q: What kind of impact would bring you great satisfaction in your work?

A: I remember the feeling of starting out as an engineer and feeling so overwhelmed at times. Having mentors who provided the proper guidance to challenge me and find the answers on my own allowed me to develop transferable problem-solving skills and grow out of my comfort zone. Becoming a mentor for those around me in a similar way would bring me the greatest satisfaction in my work. I also find sharing my experiences with fellow females in the industry and with the Women in Automation Group at Thermo Systems extremely rewarding.

Q: What are your hopes for the future of Engineering?

A: I hope the future of Engineering is inclusive, diverse, and supportive. I would love to see more women and minorities in engineering and engineering-related roles being granted opportunities that once felt unobtainable. I hope for academic and work environments that are equitable.

Q: What would you say to girls in school/college who may be considering Engineering as a career choice/study option?

A: Engineering is such a creative and fun field to be in. There are so many different disciplines within engineering where your talent and skills will be a welcomed addition. Believe in yourself, be firm and stand your ground. Create space for yourself, even if there is none created for you. Be comfortable with making mistakes and breaking things – it is all part of the process of being an engineer. Despite all the challenges I have faced, I love being an engineer, and I hope you get to experience that love for engineering too!