



## MECHANICAL ENGINEERING | EDITORIAL

# Women into Engineering: An interview with Abike Looi-Somoye

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Additional information is available at the end of the article

**Figure 1. Abike Looi-Somoye.**



### 1. What made you decide to choose engineering as a degree?

Science and maths were and still are my favourite subjects, though at A level I was clueless about what I wanted to do for further study. Attending an all-girls school, engineering was not something we talked about regularly, but there was one trip related to engineering that came up—a conference for Women in Engineering.

In the break time, I received a book from a stall. It was filled with hundreds of incredibly innovative creations, and on every page there was an invention that fixed the most practical, modern-day problems we experience every day. That was when I realised I wanted to be a part of something that has a big impact; to invent the future and solve real-world problems.

### 2. Could you tell us about what you do as a mechanical engineering undergraduate and what your degree covers?

Mechanical engineering is broad, my course at university covers these main areas:

- Mechanics of Structures—understanding the behaviour of structures, which includes concepts such as stiffness, vibration, etc.
- Materials—how materials fail, the chemistry of them, and what processes we can use to make a material fit for purpose.
- Fluid Dynamics and Thermodynamics—understanding the flow of liquids and gases and how that affects the modern world around us, such as exchanging heat, or flying an aircraft.
- Control—this relates to all your electronic devices, it is about how systems can be controlled and what can be done with this knowledge, such as flying a drone or using your mind to control a robotic arm.
- Experimentation—taking theory from the classroom and putting it into practice with experiments.
- Design—group work where your team designs a prototype and takes it to competition against the rest of the year to execute a given task. (Our year was asked to make a prototype of an emergency vehicle that would deliver aid in a time of natural crisis.)
- Project—a project in the final third year where you can pick from a list or put forward a project idea that solves an engineering problem, completing it over 7 months. It is completely up to you what you decide for your project; you can invent, optimise current designs, research and so on.

**Figure 2. Networking opportunity after the Industrial Cadet Awards presentation, Institution of Engineering and Technology. (Image from Industrial Cadets, The EDT).**



The additional aspects to the course include the option to pursue a “year abroad” attending a university in another country, or a “year in industry” working for a company gaining valuable industry experience. The University of Leicester supported me with careers advice during application processes and supported me throughout my internship.

### **3. What do you enjoy most about studying mechanical engineering?**

We have had some really exciting aspects to our course. The most memorable was when we attended a 5-day workshop after our first year of exams. We were at a local college where we learned manufacturing techniques by creating our own battery-powered turbine model, and solved energy problems using hydraulics and electronics. It was hands on, interactive, and the students teaching us made it so fun and they were so knowledgeable!

### **4. Who or what inspires you?**

It’s difficult to say a specific person or thing. Every month, someone close to me shares some of the most amazing or difficult challenges they are going through, or I see a celebrity on social media making an unforgettable speech with strong messages, or a song with apt lyrics is playing; my inspiration comes from all directions. I strive to try harder when challenges knock me down, brush off negativity, and not let social pressures get the best of me; just be myself, at my best.

### **5. You recently completed a year in industry with Rolls-Royce. Were there many industry placements available to you? Is every undergraduate on your course offered this opportunity?**

There were many interns at Rolls-Royce, the nature of work varied depending on where you were based and which team you were in.

**Figure 3. Acceptance Speech, for receiving the Industrial Cadet of the Year Award, Institution of Engineering and Technology. (Image from Industrial Cadets, The EDT).**



The University of Leicester offers a “year in industry” to all engineering students, and although it is optional it is highly recommended. Students have the full responsibility of finding a placement, and the careers department can provide advice on CVs, interview practice, etc. There is so much that you learn in industry that cannot be taught in a lecture, and even if the work is not in-depth technical engineering, the experience will help you develop the very important soft skills.

**6. In March 2018, you were awarded the Industrial Cadet of the Year Award by HRH Prince Charles, becoming the first person in the country to be awarded a Platinum Level award. Congratulations! How did it feel to receive such a high level of recognition at such an early stage of your career?**

My family were so proud, my mum especially was beaming with pride for the whole week!

Being at the Institution of Engineering and Technology was a big deal for me, let alone receiving the award from HRH Prince Charles. The day was an experience in itself; being out of my comfort zone, making a speech, receiving recognition for my achievements and meeting accomplished, inspirational people.

I am so grateful for the support of my loved ones and my colleagues that were a part of my journey at Rolls-Royce. They gave me great advice, helped grow my confidence and most importantly, trusted me with greater opportunities.

After receiving “Cadet of the Year”, I truly feel more motivated to achieve, and feel recognised for my achievements; hard work does pay off.

**7. When working in industry or throughout your degree, have you noticed a gender imbalance? How has it affected you?**

In my very first lecture, I noticed that the women were completely outnumbered! When I joined university, I think less than 10% of first-year engineering students were women, and in my 3 years of study I have never had a female lecturer.

Sadly, I have felt disadvantaged for being a woman in engineering at university. A few times, male peers assumed I had limited engineering knowledge, or I was not trusted doing a hands-on job.

What shocks me still is that some male peers openly share the following idea with me: if I were against them in a job application, I would receive the job only on the basis that I am a woman that can fill a quota, regardless of the quality of my application, skills and experience. Every time this happens I feel disrespected, as if all my efforts and achievements are worthless. However, this has helped me develop resilience, and the important skill of brushing off negativity and carrying on.

The funniest encounter was when a female friend asked me what I would “do with an engineering degree—fix cars?”. It really comes down to the mindset of society, and breaking the stereotypes. The gender imbalance will improve, and women will feel more accepted in engineering. It can be achieved. It just takes time, effort and resilience.

**8. Why do you think engineering is often perceived as a “male” occupation or area of interest?**

Historically, engineering has been a male occupation. With the job often having a hands-on aspect, it is viewed as “unladylike”, and therefore not a job for a woman. A male-dominated activity is rewarded with society’s label of being “male”, similar to how the colour blue is often associated with being male—it is a social stereotype.

I can understand why engineering may not be so popular with women. It is a really misinterpreted career, there are a lack of female role models and career progression, and the excitement of the job is often misunderstood. The prospect of being an insignificant minority, with little or no support from society or organisations, can make other careers more favourable.

**Figure 4. Science, Technology, Engineering and Mathematics (STEM) Outreach at the ‘Women in Engineering Day’, Sheffield Kelham Island Museum.**



**9. The conversation around women in STEM subjects, engineering in particular, has been ongoing for some time. What more, in addition to existing initiatives, needs to be done in order to address the balance of women and men in engineering?**

Stereotypes need to be broken, myths dispelled and positivity shined on engineering.

Bringing achievements and female role models to the forefront is crucial. Engineering companies of all sizes can take advantage of social media channels to reach young women, helping to inspire budding engineers everywhere.

Additionally, there is opportunity for those in education to find creative ways to inspire and grow women's passion for engineering, such as a day to celebrate engineering, or holiday camps. Schools, colleges and universities can help to educate young women about engineering and empower them in their pursuit.

**10. Do you have any advice for other young women starting out in engineering?**

(1) Motivation, discipline and resilience.

When faced with a challenge, channel that drive to achieve, keep focused with self-discipline, and learn to be resilient when things don't go as planned.

(2) Work experience.

Engineering touches every part of our lives; airplanes, smart watches, treating cancer, spaceships, food, the list is endless. Engineering is so broad and exciting—the best way to see this first hand is work experience. While you are in industry, be curious, ask questions (no need to be shy) and seize opportunities.

(3) Finally, enjoy and help others.

As you progress in your exciting career pioneering future technologies, remember to support other women in engineering; help to create an environment in which all of us women can thrive and one that advances society.

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