

How can more women become involved in electrical engineering? Study reveals image problems and possible countermeasures

- **Only 19 percent of students in electrical engineering and information technology are female – fewer than in all other STEM degree programs**
- **Study by VDE, IZI, FBTEI and FTEI finds that young women perceive electrical engineering to be a male-dominated domain where they would be unappreciated**
- **Targeted recruitment of female talent and women who can serve as role models should help to change this image**

(Frankfurt a. Main, 05.11.2024) For years, the proportion of women on the labor market in electrical engineering and information technology has been only eight to nine percent – even lower than the share of women among students. Dr. Michael Schanz, Head of the VDE Committee for Study, Work and Society: “This shows that the problem is even greater than we thought, as many female students apparently do not even enter the domestic job market. The proportion of women among foreign graduates is significantly higher, but many do not choose to work in Germany after graduation.” The problem is becoming particularly acute at a time of increasing demand for engineers, who are urgently needed for many technological developments, among other things. “We can’t afford to lose any bright minds at the moment, and numerous successful careers show that women are very good at electrical engineering – if they are encouraged,” explains Prof. Kira Kastell, Chairwoman of the Association of Electrical and Information Engineering Departments (FBTEI).

Electrical engineering: male domain, condescension and self-doubt

To find out what associations women have with electrical engineering and where measures need to be introduced to create a more positive image, VDE, together with the Faculty Association for Electrical Engineering and Information Technology (FTEI) and the FBTEI, has

also investigated this topic as part of a series of studies. Head of the study series is media researcher Dr. Maya Götz from the International Central Institute for Youth and Educational Television (IZI): “Girls see electrical engineering as a classic male domain and assume that they will not be taken seriously or will even be put in their place. They say that men might look down on them and that family or friends may not approve of their career choice.” She explained that young women are also afraid that they will not be able to meet the requirements or that they might even cause damage. The study surveyed a representative sample of 658 high school students who were about to graduate. In addition, 50 case studies were conducted with high-potential students, half of whom were female.

The bigger picture – changing the image of electrical engineering

Generally speaking, electrical engineering is not a subject that fascinates young people about to graduate from high school. The main problem, according to the image study carried out as part of the study series, is an inaccurate image of working life as an electrical engineer. Hunched posture, laying cables, working in overalls – these unattractive pictures keep cropping up in people’s minds and become an obstacle to finding a creative, meaningful occupation. In addition, although there is an extensive range of courses on offer, prospective students do not have an overview and there is often a lack of guidance or advice. “We need clear communication on job profiles, degree courses and course content to make electrical engineering more attractive,” says Prof. Schanz.

What can help? Role models, better advertising and new working time models

In order to attract more women to study, Prof. Kira Kastell believes that role models are needed to show them what the profession is all about: “Ideally, of course, these would be women who have successfully forged their own path and demonstrate that electrical engineering is a field that is strongly linked to sustainability and offers many opportunities for development.” In addition to role models, targeted advertising for young girls should help to make electrical engineering an attractive option. Such measures include the already established Girls’ Days, but that alone is not enough, says Dr. Maya Götz: “We need events for girls with a focus on electrical engineering. At pilot events, we have stations where e-technology students work with schoolgirls to develop solutions for a task. This strategy has proved very effective, because afterwards 50 percent of the girls were able to imagine studying the subject.” Last but not least, it is necessary to break stereotypes and to allay fears so that girls can make an informed decision.

About the study series

A total of four subject areas were examined. Volume 4 on the topic of women and electrical engineering is now available to [download for free](#) (German version), as are the first three volumes on [Image, Finding a career](#) and Dropping out of university.

About VDE:

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Our passion is the advancement of technology, the next generation of engineers and technologists, and lifelong learning and career development “on the job”. Within the VDE network more than 2,000 employees at over 60 locations worldwide, more than 100,000 honorary experts, and around 1,500 companies are dedicated to ensuring a future worth living: networked, digital, electrical. Shaping the e-dialistic future.

The VDE (VDE Association for Electrical, Electronic & Information Technologies) is headquartered in Frankfurt am Main. For more information, visit www.vde.com

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