

New VDE study on the labor market for electrical engineers: Does electrical engineering have an image problem?

- **Electrical engineering offers stable, crisis-proof employment opportunities**
- **Energy transition, digitalization, e-mobility, autonomous driving and Industry 4.0 lead to high demand for electrical engineers**
- **Action urgently needed to address student shortfall in degree programs such as electrical engineering and information technology**

The gap between graduate numbers and the growing need for electrical engineers is taking on dramatic proportions. This is the conclusion drawn by the new VDE study “Arbeitsmarkt 2022 – Elektroingenieurinnen und Elektroingenieure: Zahlen, Fakten, Schlussfolgerungen” (Labor market 2022 – electrical engineers: facts, figures and conclusions). Dr. Michael Schanz, author of the study and director of the VDE Committee for Study, Work and Society, explains: “On the one hand, we have the growth of the labor market and impacts of demographic change. On the other hand, we have a lack of interest in study programs and problems with successfully training students. The gulf between these two worlds is bigger than ever.”

Image problem?

Low proportion of women

Despite the fascinating career opportunities in energy, e-mobility and Industry 4.0, degree programs in electrical engineering and information technology are struggling to attract female students. The proportion of women is just 17 percent, substantially lower than in subjects such as renewable energy or medical technology. “Our data shows that interest in electrical engineering has been declining for years, whereas computer science is becoming increasingly popular,” says Schanz.

Identifying causes, honing messages:

The study found that students of all genders are turning their backs on electrical engineering. Schanz believes this could be explained by a perception that rival degrees in computer science are more closely tied to modern topics such as artificial intelligence, big data or embedded systems. VDE considers it vital to examine the causes in more detail so that the right messages can be conveyed to potential applicants. The association is working on a large-scale image study for electrical engineering and information technology, which should report deeper insights into the situation in April 2022. "It is clear that we'll need electrical engineers in the future, so we have to solve this problem," warns Schanz.

Study available to download

The study "Arbeitsmarkt Elektroingenieurinnen und Elektroingenieure 2022 – Zahlen, Fakten, Schlussfolgerungen" is now available to download (in German) in the VDE shop at <https://shop.vde.com/de/arbeitsmarkt-studie-2022>. It provides in-depth insights into the labor market of the future aimed at teachers, students, anyone interested in economic and educational policy, and corporate recruiters.

Brief profile of Dr. Michael Schanz

Dr. Michael Schanz, a graduate in electrical engineering and industrial engineering, manages the VDE expert committees for Study, Work and Society and the History of Electrical Engineering. After university, he began his career by developing intelligent optical sensor systems at the Fraunhofer Institute for Microelectronic Circuits and Systems, where he developed various patents and won research prizes including the prestigious Philip Morris Research Award in 1999. Since 1999, he has been working at VDE as an expert on the labor market, careers and training, and university studies in electrical engineering and information technology. He laid the foundations for a further academic training program in VDE.

About VDE

VDE, one of the largest technology organizations in Europe, has been regarded as a synonym for innovation and technological progress for more than 125 years. VDE is the only organization in the world that combines science, standardization, testing, certification and application consulting under one umbrella. The VDE mark has been synonymous with the highest safety standards and consumer protection for over 100 years.

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, over 2,000 employees at over 60 locations worldwide, more than 100,000 honorary experts and 1,500 companies are dedicated to ensuring a future worth living: networked, digital, electrical. We shape the e-dialistic future.

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

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