

In my job I get to...

# BLOW THINGS UP!



Building electrical circuits is loads of fun, so I'm super jealous of Nikita Hari who gets to do that every day! I asked her what it's like being an electrical engineering whizz...



Nikita Hari  
Electrical Engineer

Nikita Hari is an Electrical Engineering Scientist at The University of Cambridge. If you have any questions of your own for Nikita, you can contact her on [nikitahari@ieee.org](mailto:nikitahari@ieee.org)

**Q** I thought engineers designed bridges and buildings! What does an electrical engineer do?

**A** From transportation to household appliances, electricity powers the world and electrical engineers make this possible! Electrical engineers work on a wide range of components, devices and systems for generating, transmitting and converting electricity, from tiny microchips to huge power station generators.

**Q** Tell me all about your research, Nikita!

**A** Trillions of adjustments are made every second to deliver electricity from wall outlets to power any electronic device. These are made possible by systems called 'Power Electronic Converters', which are usually built using silicon. But these converters are only about 90% energy-efficient and the rest is lost as heat, wasting billions of pounds every year. My research explores better ways of converting

power using devices made of a new material called gallium nitride, which are expected to jump-start the next generation of smaller, faster and more efficient power converters.



**Q** What made you want to become an electrical engineer?

**A** As a child who loved physics and fiddling around making stuff creatively, engineering came as an obvious choice to me. And the desire to understand an electric shock I received as a kid motivated me to take up electrical engineering as my specialisation at university.



**Q** Was it easy getting where you are today, or were there any obstacles you had to overcome?

**A** My life is a story of dedication and determination to engineer my destiny. Going to Cambridge University once seemed like a fairy tale – an unachievable dream. But now, I believe that if we truly want something, and we have the dedication and discipline, we can realise our dreams. Hard work is the secret of success!

**Q** What advice do you have for young scientists?

**A** Science knows no gender, but there exists a bias against women in some fields. Never get intimidated if you are the only girl in your engineering class! Just do the best you can by believing in yourself. Work towards being the best version of you, and never allow anyone to tell you that you're incapable of something because of your gender. Your destiny is your decision! Do not allow stereotypes to stop you from doing what you love most.

Nikita gives lots of talks to encourage more girls to become engineers



## Interview with a SCIENCE HERO!

NIKITA BLOWS UP CIRCUIT BOARDS LIKE THIS ONE



**Q** What's the best thing about your job?

**A** BANG!!! I get to blow up a lot of switches in the lab, then rebuild them, then blow them up again until they decide not to blow up anymore! It's an exciting time to be working in a transition phase in power electronics. The first revolution in electronics took place in the 1940s. Now we could be on the brink of a second one that will transform the way the world handles electric power!



"Never get intimidated if you are the only girl in your engineering class!"