

Properties and changes of materials

What is a battery research scientist?

A battery scientist looks at making better performing batteries through using different materials. This is important in lots of workplaces, such as:

- ▶ research labs
- ▶ universities
- ▶ car manufacturers.

Key Learning and **Science Skills** needed:

- ▶ Team worker and patient when investigating.
- ▶ Make predictions based on their understanding of electricity as to which materials are more suitable than others.



This is Lizzie. She is a battery research scientist who works at University of Birmingham. Her research looks at making new battery materials for Li-ion batteries. You can find these batteries in smart phones and tablets.

What is a physical chemist?

A physical chemist studies how materials change when chemical reactions occur. Ruth Benerito changed the properties of cotton to make it wrinkle, stain and flame resistant. Her work and that of other physical chemists is important in lots of workplaces, such as:

- ▶ clothing retail stores
- ▶ universities
- ▶ research laboratories.

Key Learning and **Science Skills** needed:

- ▶ Setting up a range of practical enquiries to solve problems, and being resilient and sticking with the problems even when they're really challenging.
- ▶ Draw conclusions to solve problems through pattern seeking or comparative and fair tests.



This is Ruth Benerito. She invented wrinkle-resistant cotton fabric. She is credited with saving the cotton industry.

What is a colour technician?

A colour technician is a type of hairdresser that uses science and design and technology to create different dyes. The dyes are used to colour hair. They might be found working in:

- ▶ hairdressing salons
- ▶ spas or beauty parlours
- ▶ hotels or cruise ships.

Key Learning and **Science Skills** needed:

- ▶ Creativity and collaboration in creating dyes to suit different hair types.
- ▶ Careful observations of how dyes alter hair colour.



This is Alisha Dobson. She is a London hairdresser who specialises in colouring hair. She has coloured the hair of celebrities, including Jessie J, Moksi Mabuse and M.I.A.

Would you like to use your learning about properties and changes of materials when you are older? I wonder if there are more jobs that use properties and changes of materials learning?