A scientist just like me

Dr Pearl Agyakwa

Materials scientist

why & how?
PRIMARY SCIENCE TEACHING TRUST

A scientist just like me

Hi there! I am Dr Pearl Agyakwa – A materials scientist

Where do I work?

I work at the University of Nottingham as a research scientist.

What did I like doing when I was at school?

I loved music and wanted to be a musician or author! Sadly, my school did not have a music teacher. Luckily, I really liked science too, especially physics and maths.

What do I like doing in my spare time?

I love growing fruit and vegetables on my allotment. I enjoy listening to music, dancing and going on caravan holidays with my family.

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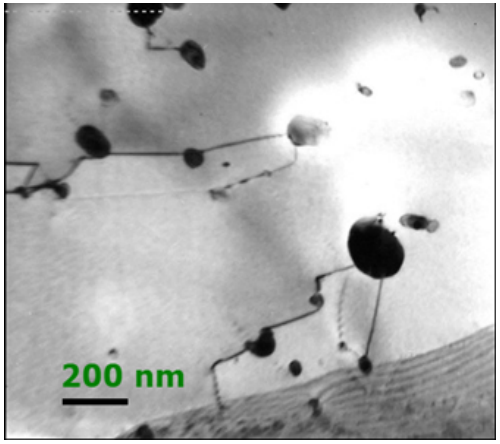
What do I do as a materials scientist?

Material science is about discovering why different materials behave the way they do, why we make something out of one material rather than another and why materials wear out. I sometimes deliberately break things by putting them through too much heat or current and then look at the cracks under powerful microscopes!



This is what crystal defects in steel look like under a powerful microscope!

How does what I do make the world a better place?

Material scientists find out what makes materials degrade which helps predict when things are likely to stop working properly. This is important in things like aeroplanes, as we would not want any parts suddenly breaking mid-air! It also helps us to find out how to design things to last longer, which is good for the planet.

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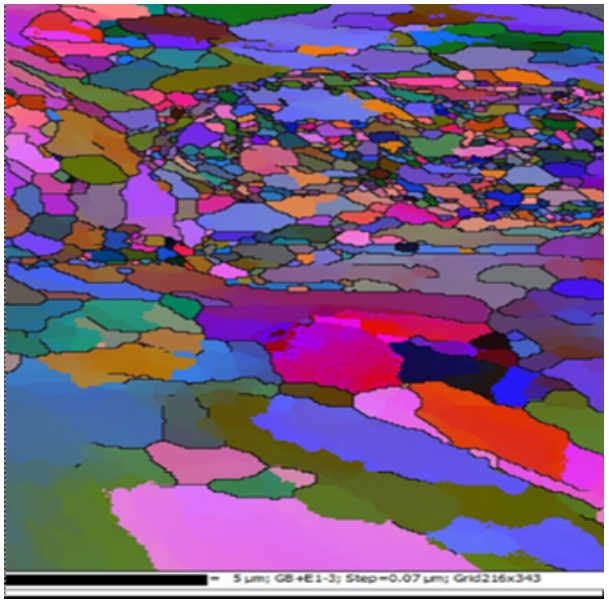

What I like about my job

I love finding out new facts about everyday materials, there's so much we still don't know, and that's exciting! I also love writing and talking about what I have found out, so I did become an author in the end, sort of!

Challenges I have faced

I get frustrated when my experiments don't go to plan, or when I can't figure out why something hasn't worked! I also have to find sponsors to provide the money I need for a piece of work. Trying to convince a sponsor can sometimes feel like an X-factor audition!

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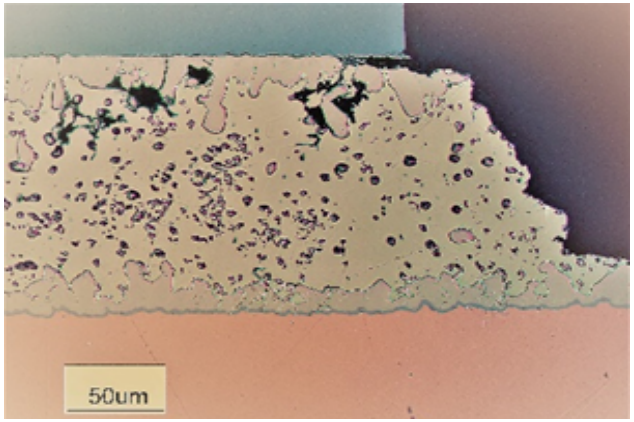
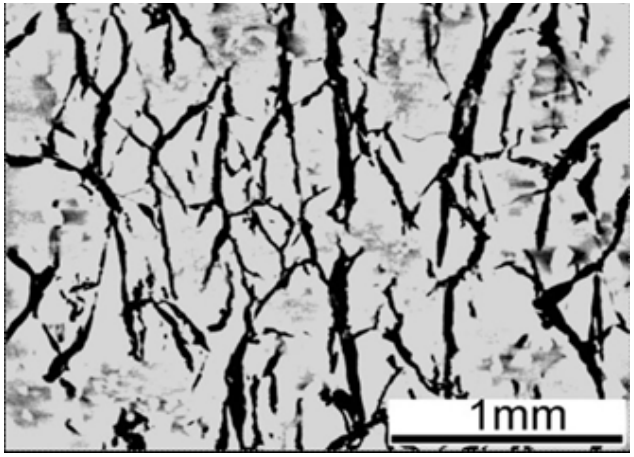
If you want to be a materials scientist, you need:

- **to be curious** and to keep asking '**why?**'
- to have **good observational skills** - a scientist is a bit like a detective - you'll spend a lot of time looking at images of material structures and looking for clues
- to **have patience** - experiments can take a long time and sometimes they have to be done over and over again





These cracks in a solder joint remind me of a dry riverbed.

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Discussion time

- Would you like to be a materials scientist like Dr Pearl Agyakwa?

  Why? Why not?

- What skills and interests do you already have that would help you become a materials scientist?
- What new skills and knowledge would you need to develop?

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Free supporting resources for materials science

Material Science CPD Unit – supports teachers to create a Materials Trail using QR codes within their own school to help children explore the common materials that make up their environment

Science Fun At Home - see 'Scavenger Hunt', 'Science with ice' and 'National Storytelling Week'

I bet you didn't know... articles use cutting-edge science research as a context for learning. Teacher Guides can be used as classroom presentations:

- What small robots can do
- How to clean water using a molecular sieve
- The disastrous effects of historical ink
- Toilets of the future may charge your mobile phone
- Slug slime might be the answer for medical adhesives

Created by the Primary Science Teaching Trust

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