

# > Case Study

Gordon Russell Wilson

STEM WORKS

Cogent skills  
for science industries



## Profile:

**Age:** 49

**Location:** Runcorn,  
Cheshire

**Company:** Thermo  
Fisher Scientific

**Job:** Production Chemist,  
Media Production

### My job – what I do

My company produces equipment to test and identify various chemicals and medicines in a wide range of industries. Carrying out end product quality control testing on chromatographic media - putting sand in tubes and testing it. Chromatographic media allows complex mixtures of chemical compounds to be separated out for individual analysis. The technique forms the basis of testing in industries such as pharmaceuticals, food, **fine chemicals** and water as well as in forensic science, drug testing in sport and environmental analysis.

### My qualifications

9 SCE Ordinary grades, 4 SCE Higher grades (Chemistry, Physics, Maths and English), BSc in General Science.

### How I got into science

When I started at university, I didn't know what I wanted to do other than study chemistry and become a 'scientist'. My degree course taught me about chemistry, among other things, while showing me what I could do with it. Despite my degree, I'm not that academically minded, and could have made much more of the opportunities I got at university. The skills I use every day are ones I have picked up in my job, although having a degree opened the door. Chromatography wasn't a large part of my degree. It should be taught more widely, at least to give people a wider understanding of its importance as it has so many applications.

### What do I do on a typical day

My job involves packing and testing the various products manufactured on site, which changes from day to day as the site produces up to 10 different products each day from a range of 300 silicas. Each **Silica** needs analysis plus packing and testing a sample **column**. Some columns take 10 minutes to pack, others 4 hours. There is also test equipment to be checked and maintained, solutions to be prepared, waste to be handled and other supporting jobs to do. 8 am: Arrive at work and assess work for day, switch on elemental analyser (lab equipment). 9 am: **Calibrate** elemental analyser and test samples. Begin packing columns. 10 am: Test standard columns and compare with the test columns. Repeat until 4 pm, fitting in training, test equipment repairs and all other work.

### Best 3 things about my job

1. The variety of people I work with.
2. The job security that comes from working for the sole manufacturer of a global product.
3. The knowledge that something you have been involved in making is improving the lives of others around the world.

### Biggest science inspiration

John Wilson, my grandfather. He was a skilled craftsman and amateur chemist who sparked my interest in science, engineering, making things and taking them apart.

Sir Sydney Smith, whose book 'Mostly Murder' inspired me to study Forensic Science.

Richard Feynman, 'all genius, all idiot', for showing that scientists can have fun as well as winning a Nobel Prize!



### In the future

I'd like to encourage more young people to become interested in science in general and chromatography in particular.

To encourage my employer to have more involvement with young people in the form of work experience and apprenticeships.

To inspire my colleagues to be more active with schools to work with me to develop inspiring content for large careers fairs like the Big Bang Fair.

### Why should young people consider a career in science?

Science and engineering have created the modern world we all live in and which you benefit from every day. Wouldn't it be great to help shape the future through science?

### Jargon Buster

**Fine Chemicals** - are high quality chemicals used in flavour, fragrance, agriculture, pharmaceutical and other industrial applications. Chromatography is a way of separating out a mixture of chemicals, which are in gas or liquid form, by letting them creep slowly past another substance, which is typically a liquid or solid.

**Column chromatography** - Instead of using paper, a vertical glass jar (the column) is packed with a highly adsorbent solid, such as sand. The mobile phase drips (or is pumped at high pressure) through the column and splits into its components, which are then removed and analysed.

**Silica** - Silica is the name given to a group of minerals composed of silicon and oxygen, the two most abundant elements in the earth's crust.

**Calibrate** - check the accuracy of a measuring instrument (test equipment) of any type.



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