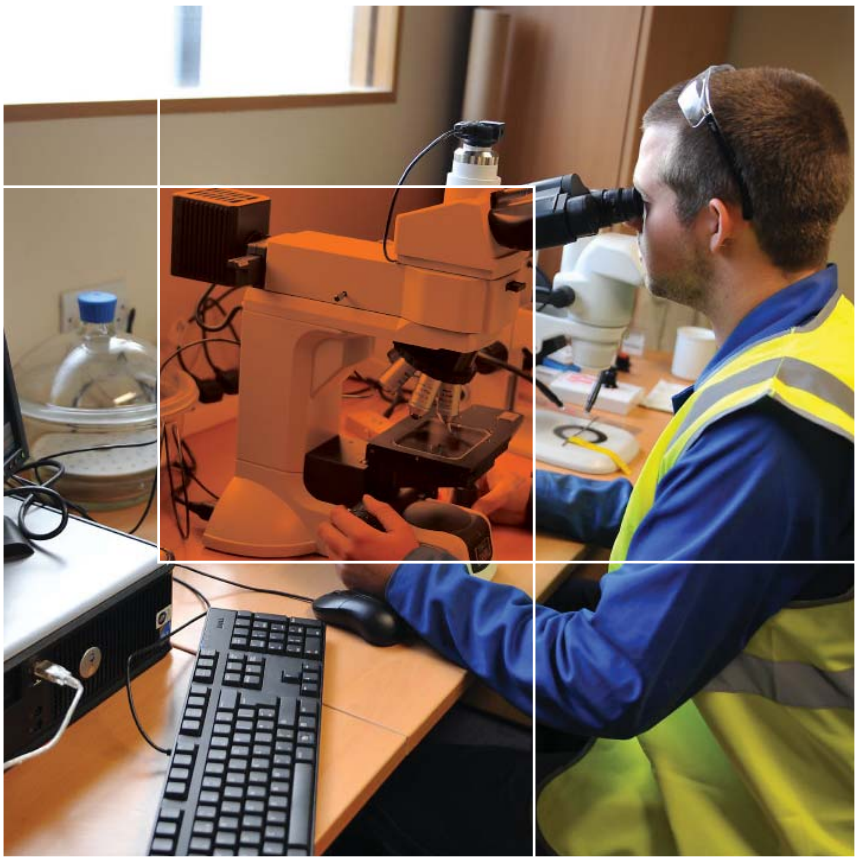
The National Skills Academy
FOR MANUFACTURING

APPRENTICE PROFILE

Matt Canham – Metallurgist



"Metallurgy is interesting, very, very broad and very enjoyable. Every sort of skill you learn as a metallurgist you can transfer to any type of industry. You can go wherever you want to go."

Matt Canham took an Advanced Apprenticeship as a metallurgist with Bridon International Ltd, a world-leading specialist in the manufacture of steel wire and rope. The company purchases steel rod from suppliers, which it cleans, galvanizes and heat treats. The steel rod is then drawn down in the wire mill into high-tensile wire for a range of uses.

Matt started out as a laboratory apprentice, studying metallurgy at college. He worked in all areas of production and engineering within the factory and surrounding offices to give him a solid foundation on which to build his knowledge. He became a junior lab technician but has already progressed to another role. As a lab technician, Matt's job was to check quality, investigate problems and help put them right. The role involves a range of tasks, lots of responsibility and a good mix of working alone and as part of a team. The job split is about 60% working in a lab or test house, using microscopes and computerised equipment to examine samples, and 40% in the factory, doing checks on machines, gathering samples for testing, monitoring processes and solving problems.

"Lab work involves preparing samples and examining them under microscopes. To prepare for microscopic examination you need to collate appropriate samples, cut them to length and use a mounting press. The job also involves grinding and polishing samples to be able to complete microscopic examination," Matt explains. "Microscopes are used mainly to check the metallurgical structure for internal defects and surface quality. I also did other physical tests to determine properties of the wire, the main one being tensile testing to see how the wire performs when put under tensile load." An important task is to record test results so the products can be certificated.

In the factory Matt would do process checks, for example testing the strength of the acid on the galvanizing process lines. He would sometimes be called onto the shopfloor if there were problems with process lines or machines, or to help with plant – for example the routine maintenance of setting up burners on furnaces – as part of a team.

Once the wire has passed all the quality checks, it can be sold direct to customers for uses such as ducting in vacuum cleaners and suspension springs for cars. Wire not sold direct to customers is mainly made into ropes. Roping wire is used on off-shore oil rigs, cranes, bridges (like the Millennium footbridge), football stadiums (like Wembley) and other structures (such as the London Eye).

Metallurgists at Bridon work a 37-hour week and flexitime is available. "You have to be there between 9.00am and 3.00pm but then it's up to you," Matt says. "I used to turn up at 7.30am and leave at 3.30pm to avoid the traffic."

"Metallurgy is interesting, very, very broad and very enjoyable. Every sort of skill you learn as a metallurgist you can transfer to any type of industry. You can go wherever you want to go. When I was at school one of the things I was scared of was being a one-trick pony – just learning one thing and being stuck in that one thing forever. I don't feel stuck at all in what I'm doing, and there's always the opportunity for me to further my knowledge and skills. Any courses or qualifications I see that I feel would improve my knowledge and can be justified, the company will organise and pay for."

Matt is now working as a technical support technician in Bridon's centre of excellence where experts from different fields carry out research and development. "My job role at the moment is to assist everyone – getting high-level projects to run on the machines, setting and checking, making sure they're running right," he says. "Whilst being very similar to my previous jobs, it's a much broader role with much more responsibility and authority. I'm getting involved in work with other materials such as carbon fibre, nylon and various polymers, not just metal." Matt is also studying part-time for a Foundation degree in materials at Sheffield Hallam University and aims to complete a full degree.