

Innoval Technology rolling courses give engineers the fundamentals

Aluminium Times was granted exclusive behind the scenes access to the most recent Innoval Technology Ltd (Innoval) international Aluminium Rolling Technology Course (ARTC) held in Banbury in May 2011, meeting lecturers and delegates alike during breaks, and attending two technical sessions.

Innoval Technology of Banbury, UK is a best practice independent consultancy for metal rolling, extrusion, forging and finishing companies, and their suppliers and customers, established in 2003 by people from Alcan's Banbury Research Centre. Innoval offer a range of courses generally, but not exclusively, concerned with the aluminium industry:

- 'Introduction to Aluminium' – a foundation course for industry newcomers
- 'Aluminium Products' – a beverage cans, foil packaging, automotive body structures, heat exchangers, architectural painted sheet or extruded product course can be chosen.
- 'Aluminium Rolling Technology' – the acclaimed hot and cold rolling course
- 'Advanced Manufacturing Methods' – including six sigma and lean manufacturing

As well as running a portfolio of professional courses, Innoval's experienced staff are active in process improvement, materials development and strategic support projects for the metals industry around the world. Their expertise and experience lies in the following areas:

- strategic investment
- metals processing
- process modelling
- metallurgy
- surfaces and coatings technology
- manufacturing best practice
- materials analysis

As a result, Innoval are accomplished in design of process cooling systems, solutions to process vibration problems, improving product flatness from mills and levellers, improving product gauge components, and reducing time and energy consumption of heating cycles.

The ARTC course is primarily designed for engineers and managers who work in aluminium rolling. However, those involved in the rolling of other metals would find the course equally valuable. The course has Professional Development recognition from the Institute of Materials, Minerals and Mining (IOM3). For those seeking an in depth understanding of the fundamentals of aluminium rolling, the course delivers a thorough knowledge of the rolling process and the principles of gauge and flatness control, allowing participants to develop in-house problem solving capability and thereby reduce downtime and improve product quality through faster diagnosis and solving of rolling problems.



ARTC delegates and trainers in front of the Innoval HQ in Banbury in May 2011.

Our experience

Following an informal gathering of the group over coffee (allowing flexibility in delegates' travel and lodging arrangements), Senior Engineering Consultant Dr Chris Davenport started the morning with 'Thermal Aspects of Rolling'. He presented with slides, flipchart and wipeboards, posing and answering questions in a light-hearted and friendly way throughout. After a break, pairs worked hands-on on a 'Thermal Aspects of Rolling Workshop' problem using a PC package with assistance from Chris. The desired results were reached and the purpose of the exercise clearly grasped by all. Dr Davenport was Alcan's expert in heat transfer prior to joining Innoval in 2003, responsible for organising Alcan Rolling Courses, and now sits on the Rolling Committee of the Institute of Materials actively organising conferences on the rolling of steel and aluminium.

Kyle Smith, Innoval Senior Process Consultant and ARTC Course Director, then took the 'Mechanics of Profile & Flatness' session. He gave a clear description of the terminology in an upbeat and engaging style of delivery. A specialist in the solution of rolling process problems and technology transfer, he was the co-organiser of Alcan's European Rolling Courses, now sits on the Rolling Committee of the Institute of Materials, Minerals and Mining (IOM3) and is active in organising metal industry conferences.

In both of the above cases, practical video footage was also used to good effect. The dynamics of the course groups are such that it takes a day or two to get over the initial apprehensions. To promote camaraderie, there are two themed social evenings on the four and a half day course. There is also a course visit to the nearby Jaguar car manufacturing plant in Birmingham.

Invaluable tool

The consultancy firm has been running its ARTC course twice a year since 2005. When the 10th course was completed in May 2010, Innoval's specialist lecturers and tutors had trained 82 people from 38 companies in 21 countries at their Banbury, UK Headquarters. Innoval recommends a maximum of 12 people on each course, to allow ample time for questions and discussion. Each delegate receives an 800 page colour reference manual and CD containing the presentation material. Between 8 and 10 delegates has been proven to give the optimum interactivity and maximum value. Past delegates have the highest

praise for the technical teaching, the networking opportunities, and the chance to practice English within these small groups.

Lecturers on this and other Innoval courses include Tom Farley, Managing Director of Innoval, who managed Alcan's Rolling Process technical programme, and became their world expert in mill and process vibration phenomena; Dr Gary Mahon is a Director of Innoval Technology and leads the Materials Group. Gary managed R&D programmes at Alcan's research centre in Banbury across many applications. He now provides technical expertise to companies throughout the supply chain and has developed a unique knowledge management-based approach to product and process improvement; Mark Foster is a Chartered Chemist who led Alcan's lubrication group in Europe and now specialises in pre-treatment of aluminium surfaces; Dan Miller became Alcan's expert on flatness control and in sheet and foil rolling. With 35 years' experience he is well qualified to carry out plant audits and to make productivity improvements.

Future plans

Innoval arranged to have Stand 6H12 at Aluminium China 2011 exhibition from 13 – 15 July 2011 at Shanghai SNIEC. Innoval is keen to broaden its customer base in Asia, and is already actively promoting in-house training for Chinese customers where all notes are available in both English and Chinese. The next ARTC course in Banbury is being run from 14 – 18 November 2011. Beyond this, Innoval is looking at the feasibility of running an open Rolling Technology Course in Chinese with Chinese notes and materials during 2012. Interested parties should contact Kyle Smith, Course Director in the first instance.

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