

4th Ingot Casting Rolling Forging (ICRF) Conference Recap

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| By Jennifer Vergot |

After two years of pandemic and travel-related setbacks, the stars finally aligned for the 4th Ingot Casting Rolling Forging (ICRF) Conference, which took place 21–23 June 2022 in Pittsburgh, Pa., USA. ICRF 2022 marked the specialty conference's North American debut. The Pittsburgh region, with its rich history of steel ingot production and rolling, was an ideal host city. Representatives from 11 different countries gathered in the Steel City to learn about latest innovations transforming the global ingot casting and forging industry.

The three-day technical program prominently showcased Industry 4.0 and how digitalization has optimized modern ingot production, forging and rolling. Several presentations discussed advanced computer modeling and 3D simulation technology applications, such as charting the evolution of steel microstructures during ingot heat treatment, annealing or process cooling; prototyping mill profile rolls designs to predict and prevent rolling defects; and employing advanced foundry inventory and data management software to optimize production schedules.

The conference also featured case studies of unique challenges faced by specialty steel producers and ingot forgers/rollers. John deBarbadillo of Special Metals Corp. presented on his company's experience crafting super-large specialty steel ingots designed for ultraefficient steam power plant applications. Others described the transformation of their working environment brought on by the global pandemic; Patrick Stockhausen of Carpenter Technology Corp. provided a retrospective of a successful Steckel mill construction project completed during quarantine, and Eike Schmilinsky of Consarc Group relayed the challenges of remote meltshop equipment commissioning and translating decades of tribal knowledge into digital and written documentation.

Another major theme that emerged from conference-goers was green transformation and decarbonizing the ingot and forging industry. In his presentation, Jared Kaufman of CIC Pittsburgh noted that in comparison to the larger primary steelmaking operations, little attention has been paid to decarbonizing ingot forges and downstream operations. He reviewed various approaches that small and mid-sized operations



| Calum Learn (left), AIST Specialty Alloy & Foundry Technology Committee chair and member of the ICRF 2022 Organizing Committee, presented a plaque of appreciation to Brendan Connolly (right), Ellwood Quality Steels, for hosting a plant tour for ICRF 2022 attendees.



ICRF attendees enjoyed a tour of Universal Stainless & Alloy Products in North Jackson, Ohio, USA.



ICRF 2022 featured a panel discussion of industry experts (left to right): Till Schneiders, Deutsche Edelstahlwerke; Robert Davidson, Universal Stainless and Alloy Products; P. Chris Pistorius, Carnegie Mellon University; George Boy, Berry Metal Co.; Francesco Memoli, Tenova Inc.; and panel moderator Thomas Wingens, Wingens LLC.

are taking to lower their carbon footprint, including reducing fuel consumption, switching to less carbon-intensive fuels, switching to electric heating, and using carbon capture, utilization and storage (CCUS) technology.

The final day of the conference featured a panel discussion with four leaders representing different facets of the ingot and forging industries: Till Schneiders of Deutsche Edelstahlwerke, Robert Davidson of Universal Stainless and Alloy Products, P. Chris Pistorius of Carnegie Mellon University and the Center for Iron and Steelmaking Research, George Boy of Berry Metal Co., and Francesco Memoli of Tenova Inc. The panelists engaged in a spirited dialogue on present issues and future

trends, including new technology adoption, meeting global carbon emissions standards, remaining competitive and exploring new markets, and attracting quality talent.

Following the morning's panel discussion, attendees had the opportunity to tour one of two specialty steelmaking operations: Universal Stainless & Alloy Products in North Jackson, Ohio, USA, and Ellwood Quality Steels in New Castle, Pa., USA.

AIST wishes to give special thanks to the members of the ICRF Organizing Committee for their tireless efforts in planning this conference, and to Consarc Group for serving as event sponsor. ♦

Representatives from the ICRF 2022 Organizing Committee attending the day's presentations (left to right): Konstantin Redkin, WHEMCO Inc.; Calum Learn, North American Forgemasters; Raymundo Ordonez, Elwood Quality Steels; Andy Pinskey, Holland Manufacturing Corp.; and Thomas Wingens, Wingens LLC.

