BEST PAPER AWARDS

1996 – 2024

A Collection of Best Paper Award Recipients from Past International Aluminum Extrusion Technology Seminar & Expositions

Extrusion Technology for Aluminum Profiles Foundation

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ET 1996 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
The Effect of Cooling Rate after Homogenization and Billet Pre-Heating Practice on Extrudability and Section Properties Part 1: Extrudability and Mechanical Properties	***Oddvin Reiso, Ulf Tundal, Oddgier Sjothun,*** *and* ***John Erik Hafsas,*** *Hydro Aluminium, Metallurgical R&D Centre, Norway*

Chairman's Award

A Paradigm Shift in Aluminum Extrusion Processes Due to Long Metal Handling	***Mars Boers,*** *Boal Extrusion Company*

ET Best of Track Papers

EXTRUSION

BEST SCIENTIFIC **Metallurgical Speed Limitations during Extrusion of Al-Mg-Si Alloys**	***Martin Lefstad,*** *SINTEF, Norway* ***Oddvin Reiso,*** *Hydro Aluminium, Metallurgical R&D Centre*
BEST OPERATIONAL **Surface Defects on 6XXX Alloy Extrusions**	***Nick C. Parson, C.W. Jowett, W.C. Fraser,*** *and* ***C.V. Pelow,*** *Kingston Research & Development Centre, Canada*

Awards of Merit

Texture and Surface Grain Structure in Aluminum Sections	***Trond Aukrust, O. Lohne,*** *and* ***T. Furu,*** *SINTEF Technology, Norway* ***E.H. Vatne,*** *NTH, Dept. of Metallurgy, Trondheim, Norway* ***S. Tjotta,*** *Hydro Aluminium R&D Centre, Norway*
Simulation of Tube Extrusion in a Two-Dimensional, Axisymmetric Model	***Paul C. Lindviksmoen, Sigurd Rystad,*** *Raufoss Hydro Automotive Research Ctr., Norway* ***Lars Hanssen,*** *SINTEF, Norway*

ET 1996 BEST PAPER AWARDS

ET Best of Track Papers	
BILLET	**AWARD RECIPIENTS**
BEST OPERATIONAL **The Role of Modeling in the Design and Operation of Remelt and Casting Facilities**	***Roger A.P. Fielding,*** *Benchmarks* ***D. Hugh Barnard,*** *Aluminum Industry Consulting* ***George E. Macey,*** *Macey Heat Transfer Associates*
Award of Merit	
Summary of Ten years of Molten Aluminum Incident Reporting	***Seymour G. Epstein,*** *The Aluminum Association, Inc., USA*
DIE	
BEST SCIENTIFIC **Analysis of Metal Flow in Weld Pocket Dies**	***Antonio E. Prats, Wojciech Z. Misiolek,*** *Rensselaer Polytechnic Institute, USA*
BEST OPERATIONAL **Tribological Evaluation of Surface Treatments for Extrusion Dies**	***Martin Sundqvist, Thomas Bjork,*** *University of Karlstad, Sweden* ***Sture Hogmark,*** *Uppsala University Sweden* ***Iyengar Srinivasas,*** *The Swedish School of Mining & Metallurgy, Sweden*
APPLICATIONS	
BEST SCIENTIFIC **Bending of Aluminum Alloy Extrusions for Automotive Applications: A Commentary on Practical and Theoretical Aspects**	***Torgier Welo,*** *Hydro Aluminum Automotive Structures, USA*
BEST OPERATIONAL **An Architect's Perspective on Aluminum**	***John Tobin,*** *Rensselaer Polytechnic Institute, USA*
Awards of Merit	
The 'Zero Discharge' Anodizing Line	***Robin C. Furneaux,*** *Alcan International, England* ***Sherri A. Finlayson,*** *Alcan International, Canada*
Production of Wide Aluminum Profiles by Solid-State Friction Stir Welding	***Ole Terje Midling,*** *Hydro Aluminium, R&D Centre, Norway* ***Helge G. Johansen,*** *Hydro Aluminium Structures, Norway*

ET 2000 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
Comparison of the Extrusion Performance and Product Characteristics of Three Structural Extrusion Alloys: AA6061, AA6082, and AA6005A (070 BP)	***Nick Parson, Jeff Hankin, Kevin Hicklin, Chris Jowett,*** *Alcan International Ltd., Canada*

Chairmans Award for Innovation

A Low-Cost Method of Manufacturing Internal Combustion Engines Using Extruded Aluminum (035 VA)	***Peter Savage, Evan Bydder, Peter Witehira,*** *Power Beat International Limited, New Zealand*

ET Best of Track Papers

BILLET PROCESS & EQUIPMENT	
Optimized 6xxx Alloy Billet Performance: A Structured Approach (057 BP)	***Dr. Ravi Shahani, Roland Tirard-Collet, Dr. Christophe Sigli,*** *Pechiney Centres de Recherches de Voreppe, France*
DIE DESIGN & TECHNOLOGY	
FEM Simulations of Aluminum Extrusion Using an Elasto-Viscoplastic Material Model (116 DD)	***Joeri Lof, MSc, G. Klaseboer, J. Huétink, Prof. Dr. ir.,*** *University of Twente, The Netherlands* ***P.T.G. Koenis,*** *Boal, B.V., The Netherlands*
EXTRUSION EQUIPMENT	
Implementation of Temperature Measurement and Control in Aluminum Extruders (047 EE)	***Madhukar Pandit, Professor Dr.-Ing. habil. Siegbert Baqué, Dipl-Ing., Wolfgang Deis, Dipl-Ing.,*** *University of Kaiserslautern, Germany* ***Klaus Müller, Dr.-Ing., Head,*** *Extrusion Research and Development Center, Technical University of Berlin, Germany*
EXTRUSION PROCESS	
The Causes of Variation in Extruded Section Weight (069 EP)	***Chris Jowett, Veikko (Mike) Johannes, Al Langille,*** *and* ***Warren Fraser,*** *Alcan International, Kingston Research and Development Centre, Canada* ***Hideki Yoshimura,*** *Shin-Nikkei Co., Ltd. Funabashi Works, Japan*
VALUE ADDED – MANAGEMENT ISSUES	
A Low-Cost Method of Manufacturing Internal Combustion Engines using Extruded Aluminum (035 VA)	***Peter Savage, Evan Bydder,*** *and* ***Peter Witehira,*** *Power Beat International Limited, New Zealand*

ET 2004 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
Isothermal Extrusion of Aluminum Alloys (EP 027)	***Masaya Takahashi,*** *Sumitomo Light Metal Industries, Ltd. Co., Japan* ***Takeshi Yoneyama,*** *Kanazawa University, Japan*

ET Best of Track Papers

BILLET OF PROCESS & EQUIPMENT	
New Technology – Improving Billet Casting and Extrusion Performance (BP 078)	***David Schloz,*** *Wagstaff, Inc., USA* ***Richard M. Kelly, Gary A. Jones,*** *Werner Company, USA*
DIE DESIGN & TECHNOLOGY	
Effect of the Convex Die Geometry on the Process Parameters During Extrusion (DD 059)	***Pawel Kazanowski,*** *Institute for Metal Forming, Lehigh University, USA* ***Wojciech Libura, AGH,*** *University of Science and Technology, Poland* ***Romana Sliwa,*** *Rzeszow University of Technology, Poland*
EXTRUSION EQUIPMENT	
The Analysis of a Fatigue Failure of a Large Indirect Aluminum Extrusion Press Container Mantle (EE 147)	***Gerry J. Dail, P.E.,*** *Alcoa, Inc. Lafayette Operations, USA*
EXTRUSION PROCESS	
Control of Grain Structure in Al-Mg-Si Extrusions (EP 101)	***Nick Parson, Simon Barker, Ann Shalanski, Chris Jowett,*** *Alcan International Limited, Canada*
MANAGEMENT ISSUES	
The Effects of Globalization on the Aluminum Extrusion Industry (MI 152)	***Bruno G. Rüttimann,*** *Alcan Singen GmbH, Germany*
VALUE-ADDED PROCESSES	
Wider Extrusions at Lower Cost by Friction Stir Welding (VA 053)	***Kari Erik Lahti,*** *ESAB AB Welding Automation, Sweden*

ET 2008 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
Scrap Allocation	***Chris Jowett,*** *Alcan Primary Metal Group, Canada* ***Johnie Adams, Chris Daughtree,*** *Magnode Corporation, USA* ***Greg Lea,*** *MI Metals, USA* ***Oliver Huff,*** *Rio Tinto Alcan, USA* ***Norm Fossl,*** *Rio Tinto Alcan, Canada*

ET Best of Track Papers

BILLET PROCESS & EQUIPMENT	
Al-Mg-Si Alloy with Improved Crush Properties	***Jostein Royset, Ulf Tundal,*** ***Oddvin Reiso,*** *and* ***Trond Furu,*** *Hydro Aluminium R&D and Technology, Norway*
EXTRUSION – DIE PRACTICAL	
Extrusion Surface Effects Resulting from Billet Surface Inflow	***William Dixon,*** *QED Extrusion Developments Inc., USA*
EXTRUSION – DIE THEORETICAL	
Control of Asymmetric Recrystallization in Single- and Multi-Hole Die Extrusion	***Zhi Peng, Terry Sheppard,*** *Bournemouth University, UK*
EXTRUSION EQUIPMENT	
Non-Destructive Examination Components	***Ronald Manganello, Alyssa Porter,*** *Carlesa NDE Services, USA*
MANAGEMENT ISSUES	
Continuous Extrusion Optimization System	***Craig Werner,*** *Werner Extrusion Solutions, USA* ***Richard Kelly,*** *Werner Co., USA*
VALUE-ADDED PROCESSES	
Mechanisms of Streaking on Anodized 6xxx Series Extrusions	***Xinquan Zhang, Malcom Couper,*** *Rio Tinto Aluminium Technology, Australia* ***Hanliang Zhu, Arne K. Dahle,*** *Materials Engineering, University of Queensland, Australia*

ET 2012 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
The Dynamics of the Dead Zones in Hot Extrusion	***Chris Jowett, Nick Parson, Raynald Guay, Sebastien Fafard, Alexandre Maltais,*** *Rio Tinto Alcan, Canada* ***Jean-François Béland,*** *Aluminium Technology Centre, Canada*

ET Best of Track Papers

BILLET PROCESS & EQUIPMENT	
The Influence of Iron Content on the Tensile Properties and Anodizing Response of AA6060 Extrusions	***Lisa Sweet,*** *CAST CRC, Australia* ***Mark A. Easton, Suming Zhu,*** *Monash University, Australia* ***Xinquan Zhang,*** *Rio Tinto Alcan, Australia*
EXTRUSION – DIE PRACTICAL	
Influence of Die Bearing Geometry on Surface Recrystallization of 6xxx Extrusions	***Nick Parson, Alexandre Maltais, Chris Jowett,*** *Rio Tinto Alcan, Canada*
EXTRUSION – DIE THEORETICAL	
Surface Pick-up Formation: New Limits in the Limit Diagram	***Andrew J. den Bakker,*** *Nedal Aluminum B.V., The Netherlands* ***Xiao Ma,*** *M2i Materials Innovation Institute, The Netherlands* ***Matthijn De Rooji,*** *University of Twente, The Netherlands* ***Robert J. Werkhoven,*** *TNO Science and Industry, The Netherlands*
EXTRUSION EQUIPMENT	
Heavy Duty Extrusion Presses for Large Profile Applications	***Axel Bauer,*** *SMS Meer GmbH, Germany*
MANAGEMENT ISSUES	
Is Operational Modeling Worth the Effort? Using Simple Spreadsheet Models of Extrusion Operations to Ask "What If?" Questions Regarding Equipment and Profiles	***Craig Werner,*** *Werner Extrusion Solutions, USA*
VALUE-ADDED PROCESSES	
Trace Elements and Their Impact on the Surface Finishing Characteristics of Aluminum Extrusions	***Jude Mary Runge,*** *Comprehensive Metallurgical Consulting, USA*

ET 2016 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
Extrusions for Automotive Crash Applications	***Nick Parson,*** *Rio Tinto Aluminium, Canada* ***Jean-François Béland,*** *National Research Council Canada, Canada* ***Jerome Fourmann,*** *Rio Tinto Aluminium, USA*

ET Best of Track Papers

BILLET PROCESS & EQUIPMENT	
Innovations in Billet Casting and Homogenization	***Jostein Royset, Oystein Bauger,*** ***Oddvin Reiso,*** *and* ***Ulf Tundal,*** *Hydro Aluminium Research & Technology Development, Norway*
EXTRUSION – DIE PRACTICAL	
Advanced Aluminum Alloys Used in the Manufacture of Products in Extrusion Process	***Bartlomiej Plonka,*** *Institute of Non-Ferrous Metals, Light Metals Division, Poland*
EXTRUSION – DIE THEORETICAL	
Modeling the Effect of Mn on Extrudability, Mechanical Properties and Grain Structure of AA6082 Alloys	***Trond Furu,*** *Norsk Hydro, Corporate Technology Office, Norway* ***Rune Osthus,*** *SINTEF Raufoss Manufacturing, Norway* ***Nadia Telioui,*** *Hydro Aluminium, Customer Technical Support, Norway* ***Regine Aagard, Magnus Bru,*** *NTNU Department of Material Science and Engineering, Norway* ***Ole Runar Myhr,*** *Hydro Aluminium Research & Technology Development, Norway*

ET 2016 BEST PAPER AWARDS

ET Best of Track Papers	
EXTRUSION EQUIPMENT	**AWARD RECIPIENTS**
HybrEx – An Innovative Extrusion Press with Hybrid Drive Technology	***Axel Bauer,*** *SMS group GmbH, Germany*
MANAGEMENT ISSUES	
A Novel Methodology for Optimization of Properties, Costs and Sustainability of Aluminum Extrusions	***Ole Runar Myhr,*** *Hydro Aluminium Research & Technology Development, Norway* ***Rune Osthus,*** *SINTEF Raufoss Manufacturing, Norway* ***Jostein Soreide, Trond Furu,*** *Norsk Hydro, Corporate Technology Office, Norway*
VALUE-ADDED PROCESSES	
Surface Topography of Aluminum Extrusions after Caustic and Acid Etching and Its Implications for Streaking Defects	***Xinquan Zhang,*** *Rio Tinto Aluminium, Australia* ***Natalia Danilova,*** *Queensland University of Technology, Australia*

ET 2022 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
Effect of Press Quench Rate on Automotive Extrusion Performance (EP 25)	***Nick C. Parson, Paul Rometsch,*** *Rio Tinto Aluminium, Arvida Research and Development Centre, Canada* ***Jean-François Béland,*** *National Research Council Canada, Canada* ***Jerome Fourmann,*** *Rio Tinto Aluminium, USA*

ET Best of Track Papers

BILLET PROCESS & EQUIPMENT	
Modeling the Precipitation of Dispersoids during Homogenization of 3xxx-Series and 6xxx-Series Extrusion Billets (BP 31)	***Warren J. Poole, Chenglu Liu, Zhijun Zhang,*** *The University of British Columbia, Canada* ***Qiang Du,*** *SINTEF Industry, Norway* ***Lei Ray Pan, Nick C. Parson,*** *Rio Tinto Aluminium, Canada*
EXTRUSION EQUIPMENT	
Will Your Plant Be Ready for the Connected Future? (EE 183)	***Michael R. Kramer,*** *Bosch Rexroth Corporation, USA*
EXTRUSION – DIE PRACTICAL	
Extrusion Productivity: Billet Geometry/ Container/Dummy Block (EP 7)	***Paul H. Robbins, Yahya Mahmoodkhani,*** *Castool Tooling Systems, Canada* ***Chris Jowett,*** *Rio Tinto Aluminium, Canada* ***Richard F. Dickson,*** *Hydro Aluminum Metals USA, USA*

ET 2022 BEST PAPER AWARDS

ET Best of Track Papers	
EXTRUSION – DIE THEORETICAL	**AWARD RECIPIENTS**
The Effect of Press Quench Rate on Grain Boundary Precipitation and Fracture of 6xxx-Series Alloys (TH 32)	***Warren J. Poole, Zhijun Zhang,*** ***Mojtaba Mansouri Arani,*** *The University of British Columbia, Canada* ***Nick C. Parson,*** *Rio Tinto Aluminium, Canada* ***Mei Li,*** *Ford Motor Company, USA*
MANAGEMENT ISSUES	
Recycling End-of-Life Scrap into High-Quality Extrusion Ingot (MI 39)	***Stig Tjotta,*** *Hydro Aluminium Primary Metal, Norway* ***Ludovic Dardinier,*** *Hydro Aluminium Primary Metal, Luxembourg* ***Georg Rombach,*** *Hydro Aluminium Rolled Products, Germany* ***Roland Scharf-Bergmann,*** *Hydro Aluminium Primary Metal, Germany*
VALUE-ADDED PROCESSES	
A Virtual Tool to Predict Damage and Failure of Extruded Components for Crash Applications (VA 58)	***Jean-François Béland, Guillaume D'Amours,*** *National Research Council Canada, Canada* ***Nick C. Parson,*** *Rio Tinto Aluminium, Arvida Research and Development Centre, Canada*

ET 2024 Best Paper Awards

ET Best Overall Paper

PAPER TITLE	AWARD RECIPIENTS
The Journey to Supply Automotive Grade Extrusions: Challenges and Solutions (EP 311)	***Jerome Fourmann,*** *Rio Tinto Aluminium, USA* ***Jean-François Béland,*** *National Research Council Canada, Canada* ***Paul Rometsch, Nick C. Parson,*** *Rio Tinto Aluminium, Canada*

ET Best of Track Papers

ALLOYS & BILLET PROCESS	
Potential for Using Scandium in Extrusion Alloys (BP 326)	***Paul Rometsch,*** *Rio Tinto Aluminium, Canada* ***Jerome Fourmann,*** *Rio Tinto Aluminium, USA*
EXTRUSION EQUIPMENT	
Measuring and Correcting Distortion in Extrusions (EE 439)	***Norbert Meinikmann, Philipp Hettich,*** *Laubinger + Rickmann GmbH & Co. KG, Germany* ***Martin Hartlieb,*** *Viami International Inc., Canada*
EXTRUSION & DIE PROCESS APPLICATION	
Quench Sensitivity of Automotive Extrusion Alloys (EP 318)	***Nick C. Parson,*** *Rio Tinto Aluminium, Canada* ***Jean-François Béland,*** *National Research Council Canada, Canada* ***Jerome Fourmann,*** *Rio Tinto Aluminium, USA*
EXTRUSION & DIE R&D	
Effect of Local Microstructure on Mechanical Behavior of Extrusion Weld Seams (RD 330)	***Andrew Zang, Warren J. Poole,*** *The University of British Columbia, Canada* ***Jean-François Béland,*** *National Research Council Canada, Canada* ***Yu Wang, Mary A. Wells,*** *Mechanical and Mechatronics Engineering, University of Waterloo, Canada* ***Nick C. Parson,*** *Rio Tinto Aluminium, Canada*

ET 2024 BEST PAPER AWARDS

ET Best of Track Papers	
SUSTAINABILITY & MANAGEMENT	**AWARD RECIPIENTS**
The Business Case for Lightweighting in Battery Electric Vehicles (SM 366)	***Stig Tjoetta, Frode Paulsen,*** *Hydro Aluminium Metal, Norway*
EXTRUSION FINISHES & FABRICATION	
Forming of Aluminum Extrusions for Automotive Applications – Part II: Recent Advances and Prospectives of Method (FF 538)	***Jun Ma, Torgeir Welo,*** *Department of Mechanical and Industrial Engineering, Norwegian University of Science and Technology (NTNU), Norway*
EXTRUSION DESIGN & INNOVATION	
Solution Development and Profile Design (EI 454)	***Ben Kuhn,*** *Almag Aluminum Inc., Canada*