

# Technical Papers

Scroll to the title and select a **Blue** link to open a paper. After viewing the paper, use the bookmarks to the left to return to the beginning of the Technical Papers.

---

<a href="#">Evolution of Advanced High-Strength Steels (AHSS) to Meet Automotive Challenges</a> .....	1
<i>N. Fonstein, H.J. Jun, O. Yakubovsky, R. Song, N. Pottore</i>	
<a href="#">Advanced High-Strength Steel — Recent Progress, Ongoing Challenges and Future Opportunities</a> .....	15
<i>James Dykeman</i>	
<a href="#">Local Deformation Analysis in Low-Carbon, Dual-Phase Steel Composed of Ferrite and Martensite</a> .....	29
<i>Daisuke Terada, Masayoshi Wadamori, Nobuhiro Tsuji</i>	
<a href="#">Microstructure Engineering of Dual-Phase Steels</a> .....	37
<i>M. Militzer, W.J. Poole, T. Garcin, M. Kulakov, B. Zhu</i>	
<a href="#">Adapting AHSS Concepts to Industrial Practice</a> .....	45
<i>R. Mostert, B.L. Ennis, D.N. Hanlon</i>	
<a href="#">Role of Microstructure on Edge Flangeability of Dual-Phase 780 Steels</a> .....	55
<i>Constantin Chiriac, David P. Hoydick</i>	
<a href="#">Anisotropy Effects in the Axial Crash Behavior of Advanced High-Strength Steels</a> .....	63
<i>Todd M. Link, Guofei Chen</i>	
<a href="#">Retained Austenite Morphology Effects on Hole Expansion of Ultrahigh-Strength Steels</a> .....	71
<i>R.J. Johnson, E. De Moor, N. Fonstein, D.N. Hanlon, A. Pichler</i>	
<a href="#">Effect of Microstructure on Stretch-Flangeability in 980 MPa Hot Rolled Steels</a> .....	85
<i>Joo-Seung Lee, Myung-jin Lee, Hyeonghyeop Do, Seongju Kim, Yeong-do Park, Yang-Do Kim, Namhyun Kang</i>	
<a href="#">The Evaluation of the Edge Ductility of High-Strength DP Steel and Improvement by NbC Precipitates</a> .....	87
<i>Nam Hoon Goo, Sung Su Han, Sungju Kim</i>	
<a href="#">The Mechanical Properties of 10–12% Mn Steels</a> .....	95
<i>B.C. De Cooman, Sangwon Lee</i>	
<a href="#">Effect of Annealing Parameters on Microstructure and Mechanical Properties of Phosphorus Alloyed 16%Mn-TWIP Steel</a> .....	105
<i>S. Hofer, K. Steineder, R. Schneider, M. Hartl, E. Arenholz, L. Samek</i>	
<a href="#">Effect of Strain Path on the Microstructural Evolution in a Fe-22Mn-0.6C Alloy</a> .....	113
<i>Y. Lü, M. Bruhuis, J. McDermid</i>	
<a href="#">TRIP Behavior of Austenite and <math>\epsilon</math>-Martensite Microstructures</a> .....	119
<i>D.C. Van Aken, Scott Pisarik, M.C. McGrath</i>	
<a href="#">Development of TBF Steels With 980 MPa Tensile Strength for Automotive Applications: Microstructure and Mechanical Properties</a> .....	131
<i>A. Bachmaier, K. Hausmann, D. Krizan, A. Pichler</i>	
<a href="#">Industrial Application of Q&amp;P Sheet Steels</a> .....	141
<i>Wang Li, Zhong Yong, Feng Weijun, Jin Xinyang, John G. Speer</i>	

<b>Tensile Properties Obtained by Q&amp;P Processing of Mn-Ni Steels With Room Temperature Quench Temperatures</b> .....	153
<i>G.A. Thomas, E. De Moor, J.G. Speer</i>	
<b>Industrial Production of Quenching and Partitioning Steel</b> .....	167
<i>C. Föjer, J. Mahieu, N. Bernier</i>	
<b>Advanced Ultrahigh-Strength TRIP-Aided Martensitic Sheet Steels for Automotive Applications</b> .....	175
<i>K. Sugimoto, J. Kobayashi, D.V. Pham</i>	
<b>Austenite Stability Study by Microtensile Testing of Q&amp;P Steel</b> .....	185
<i>Dorien De Knijf, Roumen Petrov, Cecilia Föjer, Leo A.I. Kestens</i>	
<b>Wet Flash Cooling®: A Flexible and High-Performance Quenching Technology for Improved AHSS</b> .....	197
<i>D. Delaunay, E. Magadoux, S. Mehraïn</i>	
<b>Coil-to-Coil Joining With Laser Welding in Particular for “Sophisticated Steel Grades”</b> .....	205
<i>Ralf Wallmeyer, Manfred Neumann</i>	
<b>Supporting the Development of AHSS by Online Measurement of Material Properties With IMPOCpro</b> .....	213
<i>Matthias Bärwald, Steve Devorich, Mike Gilbert</i>	
<b>The Path for Industrial Processing of Advanced High-Strength Steel in Continuous Galvanizing Lines</b> .....	225
<i>Karim Kahoul</i>	
<b>Automotive Body Press-Hardened Steel Trends</b> .....	239
<i>Paul J. Belanger, Jody N. Hall, Jason J. Coryell, Jatinder P. Singh</i>	
<b>Novel Alloying Design for Press Hardening Steels With Better Crash Performance</b> .....	251
<i>Jian Bian, Hardy Mohrbacher</i>	
<b>Pretreatment to Prevent Coating Liquefaction in Aluminized Sheet Steel During High-Rate Austenitization for Press Hardening</b> .....	263
<i>Tyson W. Brown, Jason Coryell, Paul Belanger, John G. Speer, David K. Matlock</i>	
<b>Thermodynamic Modeling of the MnO-B<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> System for the Oxidation of High-Strength Steels Containing Boron</b> .....	275
<i>Young-Min Kim, In-Ho Jung</i>	
<b>Effect of Silicon in As-Quenched and Quenched and Tempered Low-Carbon Martensite</b> .....	283
<i>James Johnson, Hyuan-Jo Jun, Nina Fonstein, Charles M. Enloe</i>	
<b>Crystallographic Features of Hydrogen-Related Fracture in Martensitic Carbon Steels</b> .....	293
<i>Akinobu Shibata, Tamotsu Murata, Nobuhiro Tsuji</i>	
<b>Effect of Strain Rate on Hydrogen Embrittlement in Low-Carbon Martensitic Steel</b> .....	303
<i>Y. Momotani, A. Shibata, D. Terada, N. Tsuji</i>	
<b>The Alloy Design and Processing of Dual-Phase 980 Steels for Zinc-Coated Applications</b> .....	311
<i>C.I. Garcia, M. Hua, K. Cho, X. Liang, K. Redkin, A.J. DeArdo</i>	
<b>Advanced Metallurgical Concepts for DP Steels With Improved Formability and Damage Resistance</b> .....	319
<i>Hardy Mohrbacher</i>	
<b>Perspectives in High-Strength Steels: Interactions Between Non-Equilibrium Phases</b> .....	331
<i>M.J. Santofimia, S.M.C. van Bohemen, D.N. Hanlon, L. Zhao, J. Sietsma</i>	

<b>Integrated Computational Materials Engineering (ICME) for Third Generation Advanced High-Strength Steels: A New Four-Year Project</b> .....	341
<i>L.G. Hector Jr., R. Krupitzer, A.K. Sachdev, Wang Li</i>	
<b>Dependence of Mechanical Properties on Annealing Parameters in Medium-Mn TRIP Steels</b> .....	351
<i>Yulong Zhang, Wang Hua, Hong Jiyao</i>	
<b>Dynamic Mechanical Behavior of Medium Manganese Steels</b> .....	361
<i>H. Aydin, E. Essadiqi, S. Yue</i>	
<b>Correlation Between Deformation-Induced Martensitic Transformation and Mechanical Properties in TRIP Phenomenon</b> .....	371
<i>Meichuan Chen, Si Gao, Akinobu Shibata, Daisuke Terada, Nobuhiro Tsuji</i>	
<b>Relationship Between Low-Temperature Embrittlement and Microstructure of Martensite in Low-Carbon Martensitic Steel</b> .....	377
<i>Mizuki Tsuboi, Akinobu Shibata, Daisuke Terada, Nobuhiro Tsuji</i>	

### **PowerPoint Presentations**

<b>Dynamic Nanophase Strengthening in New Classes of Advanced High-Strength Steels</b> .....	383
<i>A.V. Sergueeva, B.E. Meacham, S. Cheng</i>	
<b>Effect of Thermomechanical Processing Schedule on Interphase Precipitation and Nano Clusters Formation in Titanium-Molybdenum Steels</b> .....	409
<i>S. Mukherjee, I.B. Timokhina, H. Beladi, C. Zhu, S.P. Ringer, P.D. Hodgson</i>	
<b>The Intervariant Crystallographic Plane Character Distribution in a Lath Martensite</b> .....	427
<i>Hossein Beladi, G.S. Rohrer, A.D. Rollett, V. Tari, P.D. Hodgson</i>	
<b>Effect of Microstructure on the Work-Hardening Mechanisms of Dual-Phase Steels</b> .....	445
<i>Hossein Seyedrezai, J.D. Boyd, A.K. Pilkey</i>	
<b>Material Breakthroughs Leading Toward Next-Generation AHSS</b> .....	473
<i>D.J. Branagan, B.E. Meacham, S. Cheng, L. Ma, A.V. Sergueeva</i>	
<b>Static Nanophase Refinement in New Classes of AHSS</b> .....	505
<i>S. Cheng, A.V. Sergueeva, B.E. Meacham, L. Ma, D.J. Branagan</i>	