

Eren Billur

CONTACT INFORMATION	Atılım Üniversitesi Automotive Engineering Dept. A-2054 Kızılcaşar Mah., İncek, Ankara	+90 312 5868715 eren@billur.com.tr
RESEARCH INTERESTS	Sheet Metal Forming, Automotive Steels, Hot Forming, Servo Press Technologies, Advanced High Strength Steels.	
EDUCATION	The Ohio State University , Columbus, OH Ph.D., Mechanical Engineering CGPA 3.82/4.00, 05/2013 <ul style="list-style-type: none">Dissertation: <i>Fundamentals and Applications of Hot Stamping Technology for Producing Crash-Relevant Automotive Parts</i>Advisor: Prof. Taylan Altan Virginia Commonwealth University , Richmond, VA M.S., Mechanical Engineering, CGPA 3.75/4.00 12/2008 <ul style="list-style-type: none">Thesis: <i>Warm Hydroforming Characteristics of Stainless Steel Sheet Metals</i>Advisor: Assoc. Prof. Muammer Koç Başkent Üniversitesi , Ankara, Turkey B.S., Mechanical Engineering, CGPA 3.78/4.00 06/2007 <ul style="list-style-type: none"><i>Summa Cum Laude</i>Senior Design: <i>Design and Manufacturing of a Hydraulic Extruder</i>	
PROFESSIONAL EXPERIENCE	Billur Metal Form Engineering and Consulting Ltd. , Bursa, Turkey Founder Manager 05/2015 to present Atılım University , Ankara, Turkey Automotive Engineering Department Assistant Professor 09/2014 to present Adjunct Lecturer 02/2014 to 09/2014 The Ohio State University , Columbus, OH, USA Mechanical Engineering Department Post-doctoral Researcher 05/2013 to 11/2013 Graduate Research Associate 09/2009 to 05/2013 Visiting Scholar 03/2009 to 09/2009 Virginia Commonwealth University , Richmond, VA, USA Mechanical Engineering Department Graduate Research Assistant 08/2007 to 01/2009 Ortadoğu Rulman Sanayi A.Ş. , Polatlı, Turkey Manufacturing Planning Department Intern Engineer 07/2006 to 08/2006 Vaptsarov Press Ltd. , Pleven, Bulgaria Manufacturing Department Intern Engineer 07/2005 to 08/2005	
LANGUAGE SKILLS	Turkish: Native English: Fluent TOEFL IBT: 102/120 (2007) YDS:86.5/100 (2014) German: Intermediate Zertifikat B1 = 84/100 (2016)	
COMPUTER SKILLS	Operating Systems: Windows 10. CAD/CAE: PamStamp, MSC.Marc, HyperWorks, AutoCAD, SolidWorks Others: MATLAB, Adobe Illustrator, L ^A T _E X 2 _ε , MS Office	

PROFESSIONAL ACTIVITIES	<p>(2016-Present) Member of MATİM (Makine Tasarım ve İmalat Derneği - Machine Design and Manufacturing Society)</p> <p>(2015-Present) Member of AIST (Association of Iron and Steel Technology)</p> <p>(2009-2012) Student Member of SME (Society of Manufacturing Engineers)</p> <p>(2009-2012) Student Member of ASME (American Society of Mechanical Engineers)</p> <p>(2008) President of VCU GradME (Graduate Student Organization of Mech. Engineers)</p> <p>2006-2007 Founder member of Başkent Mechatronics Group</p>
PRACTICAL SKILLS & TRAININGS	<p>Metal Forming simulation with LS-Dyna, by Metal Forming Center of Excellence at Atılım University (2016).</p> <p>Hydraulic Press Operation and Safety Training, by Minster Press, Minster, OH (2012).</p> <p>Surface Profilometer Training, by Mitutoyo America Corp. (2011).</p> <p>Coordinate Measuring Machine (CMM) Training, at The Ohio State University, Industrial Engineering Department (2009).</p> <p>Tensile Test Training, by Instron at Virginia Commonwealth University (2008).</p> <p>Mechanical and Hydraulic Press Operation Training, by Vaptsarov Press Ltd., Pleven, Bulgaria (2005).</p>
AWARDS, CERTIFICATES & WORKSHOPS	<p>Effective Teaching Training, by Atılım University Educational Technologies and Pedagogy Office, Ankara, Turkey (2015).</p> <p>Visual Mesh Training, by ESI North America, Farmington Hills, MI (2013).</p> <p>Hyper Works Training, by Altair Engineering, Troy, MI, (2012).</p> <p>Certified SolidWorks Associate, by Dassault Systèmes, test score 240/240 (2011).</p> <p>SolidWorks Workshop, at The Ohio State University (2010).</p> <p>PamStamp 2G Certificate, by ESI North America, Farmington Hills, MI (2009).</p>
GRANTS & PROJECTS	<ol style="list-style-type: none"> 4. Effects on Servo Press Forming on Minimum Bending Radii of UHSS Plates, Atılım University - Undergraduate research project, 5,000 TRY, December 2015 - May 2016. 3. Engineering and production of a servo press retrofit system, Turkish Ministry of Science, Industry and Technology - Techno-Initiative Capital Support Program, 99,700 TRY, June 2015 - June 2016. 2. Modelling of Sheet Metal Forming in Warm and Hot Conditions, Turkish Science Foundation (TÜBİTAK) 2232 project, 103,000 TRY, March 2014 - March 2016. 1. Hybrid Modeling of Equipment Efficiency and Health for Advanced Servo-Drive Presses, NSF CORBI proposal in collaboration with University of Cincinnati's Intelligent Manufacturing Systems (IMS) Center, \$100,000, February 2010 - February 2012.
REFEREED JOURNAL PUBLICATIONS	<ol style="list-style-type: none"> 3. E. Billur, Y. Demiralp, A.R. Groseclose, T. Altan, B. Wadman. "Factors Affecting the Accuracy of Flow Stress Determined by the Bulge Test", <i>Steel Research International</i>, ICTP 2011 Special Edition:726-731, 2011 [SCI]. 2. M. Koç, S. Mahabunphachai, E. Billur, "Forming characteristics of austenitic stainless steel sheet alloys under warm hydroforming conditions", <i>Int. J. Adv. Manuf. Technol.</i>, 56(1-4):97-113, 2011 [SCI-E]. 1. M. Koç, E. Billur, Ö.N. Cora, "An experimental study on the comparative assessment of hydraulic bulge test analysis methods", <i>Materials & Design</i>, 32(1):272-281, 2011 [SCI-E].

BOOK CHAPTERS

- o **1 Chapter** in “*Automotive Steels - Design, Metallurgy, Processing and Applications*”, ed. Radhakanta Rana and Shiv Brat Singh, Woodhead Publishing (2016):
- 7. **E. Billur**, “Chapter 12: Hot Formed Steels”, pp. 387-412.

- o **1 Chapter** in “*Sheet Metal Forming - Processes and Applications*”, ed. T. Altan and A.E. Tekkaya, ASM International (2012)
- 6. **E. Billur**, “*Chapter 16: Die Materials and Coatings*”, pp. 317-338.

- o **5 Chapters** in “*Sheet Metal Forming - Fundamentals*”, ed. T. Altan and A.E. Tekkaya, ASM International (2012)
- 5. **E. Billur**, A.E. Tekkaya, “*Chapter 3: Plastic Deformation: Strain and Strain Rate*”, pp. 27-32.
- 4. H. Palaniswamy, **E. Billur**, “*Chapter 4: Plastic Deformation: Flow Stress, Anisotropy and Formability*”, pp. 33-52.
- 3. **E. Billur**, A.E. Tekkaya, “*Chapter 9: Principles of Sheet Forming Presses*”, pp. 129-144.
- 2. T. Yelich, **E. Billur**, “*Chapter 10: Mechanical Presses*”, pp. 145-159.
- 1. **E. Billur**, “*Chapter 12: Hydraulic Presses*”, pp. 181-201.

BOOKS

- 1. **E. Billur**, *Hot Stamping of Ultra High Strength Steels: An Overview of Technology and Business*, Springer, (in preparation).

CONFERENCE PROCEEDINGS

- 17. **E. Billur**, B. Çetin, C. Yazganarıkın, “*New Generation Ultra-High Strength Steels for Cold Forming*”, In Proceedings of 18th International Metallurgy and Materials Congress (IMMC 2016), pp 451-454, September 29-October 1, Istanbul, Turkey.
- 16. **E. Billur**, G. Durkaya, B. Çetin, M.M. Yılmaz, A. Atay, A.G. Oğuz, O. Onaylı, U.C. Yalazi, E. Kılıcı, “*Investigation of The Effect of Servo-Press Forming in Springback and Minimum Bending Radii of Ultra High Strength Steels*”, in Proceedings of 17th International Conference On Machine Design And Production (UMTIK 2016), pp 811-823, July 12-15, Bursa, Turkey.
- 15. **E. Billur**, B. Çetin, R.O. Uğuz, K. Davut, E. Arslan, “*Advanced Material Characterization of TWIP Steels*”, in proceedings of New Developments in Sheet Metal Forming 2016 (NEBU 2016), pp 303-318, May 10-11, Stuttgart, Germany.
- 14. **E. Billur**, B. Çetin, M.M. Yılmaz, A.G. Oğuz, A. Atay, K. Ersoy, R.O. Uğuz, B. Kaftanoğlu, “*Forming of New Generation AHSS Using Servo Presses*”, in proceedings of 5th International Conference on Accuracy in Forming Technology (ICAFT 2015), pp. 175-191, November 10-11, Chemnitz, Germany.
- 13. **E. Billur**, H. Porzner, D. Lorenz, M. Holeček, M. Vrojlik, M. Hoss, B. Damenha, J. Friberg, C. Koroschetz, M. Skrikerud, “*From Concept to Virtual Reality: Virtual Hot Forming Engineering*”, in proceedings of 5th International Conference on Hot Sheet Metal Forming (chs² - 2015), pp. 463-470, May 31-June 4, Toronto, ON, Canada.
- 12. **E. Billur**, “*Producing Ultra High Strength Automotive Components: Hot Stamping of Boron Alloyed Steels vs. Cold Stamping of New Generation Steels*”, presented at 2nd International Metal Forming Conference (MetForm 2014), September 24-27, Ankara, Turkey.

11. **E. Billur**, C. Wang, C. Bloor, M. Holeček, H. Porzner, T. Altan, “*Advancements in Tailored Hot Stamping Simulations: Cooling Channel and Distortion Analyses*”, in AIP Conference Proceedings, Vol. 1567, pp. 1079-1084, The 9th International Conference and Workshop on Numerical Simulation of 3D Sheet Metal Forming Processes (NUMISHEET 2014), January 6-10, 2014, Melbourne, Australia.
 10. **E. Billur**, A. Groseclose, T. Mao, T. Altan, “*Current Applications of FE Simulation for Blanking and Stamping of Sheet Materials*”, in Proceedings of Tools and Technologies for Processing Ultra High Strength Steels, pp. 221-238, September 19-20, 2013, Graz - Austria.
 9. **E. Billur**, H. Porzner, T. Altan, “*Virtual Prototyping of Lightweight Designs Made with Cold and Hot Formed Tailored Solutions*”, in Proceedings of the 2nd World Congress on Integrated Computational Materials Engineering (ICME), pp. 49-54, July 7-11, 2013, Salt Lake City, UT, USA.
 8. T. Altan, A. Groseclose, **E. Billur**, S. Subramonian, T. Mao, “*Advances and Challenges in Sheet Metal Forming Technology*”, in Proceedings of 7th International Conference on Design and Production of Machines and Dies/Molds, pp. 1-6, June 20-23, Antalya, Turkey.
 7. R. Perez-Santiago, **E. Billur**, A. Ademaj, C. Sarmiento, R. Berlanga, T. Altan, “*Hot Stamping of a B-Pillar with Tailored Properties: Experiments and Preliminary Simulation Results*”, in Proceedings of 4th International Conference on Hot Sheet Metal Forming (chs² - 2013), pp. 83-90, June 9-12, 2013, Luleå, Sweden.
 6. **E. Billur**, H. Porzner, M. Holeček, T. Altan, “*Virtual Prototyping of Hot Formed Tailored Light-weight Designs*”, in Proceedings of 4th International Conference on Hot Sheet Metal Forming (chs² - 2013), pp. 303-310, June 9-12, 2013, Luleå, Sweden.
 5. T. Altan, **E. Billur**, H. Porzner, D. Dooge, Y. Vincent, H. Porzner, “*Concurrent Engineering with Hot and Cold Formed Tailored Solutions*”, in proceedings of International Automotive Body Congress (IABC 2013), pp. 91-112, May 14-15, 2013, Frankfurt, Germany.
 4. M. Shah, **E. Billur**, P. Sartkulvanich, J. Carsley, T. Altan, “*Cold and warm hydroforming of AA5754-O Sheet: FE Simulations and Experiments*”, in AIP Conference Proceedings, Vol. 1383, pp. 690-697, The 8th International Conference and Workshop on Numerical Simulation of 3D Sheet Metal Forming Processes (NUMISHEET 2011), August 21-26, 2011, Seoul, S. Korea.
 3. **E. Billur**, T. Altan, “*Challenges in Forming Advanced High Strength Steels*”, in Proceedings of New Developments in Sheet Metal Forming 2010, pp. 285-304, May 2-4, 2010, Stuttgart, Germany.
 2. **E. Billur**, S. Mahabunphachai, M. Koç, “*Formability of Austenitic Stainless Steels under warm hydroforming conditions*”, in Transactions of NAMRI/SME, Vol. 37, 2009, pp. 341-348, NAMRC 2009 Conference (ref: TP09PUB63), May 19-22, 2009, Clemson, SC, USA.
 1. **E. Billur**, M. Koç, “*A comparative study on hydraulic bulge testing and analysis methods*”, in ASME Conf. Proc. 2008, pp. 59-65, Manufacturing Science and Engineering Conference (ref: MSEC2008-72238), October 7-10, 2008, Evanston, IL, USA.
12. **E. Billur**, B. Çetin, M. M. Yılmaz, O. Onaylı, A. Atay, A.G. Oğuz “*Geliştirilmiş Yüksek Mukavemetli Çeliklerin Servo Pres Kullanılarak Bükülmesi*” (Forming of New Generation AHSS Using Servo Presses, in Turkish), *Makine Tasarım ve İmalat Dergisi*, 14(2):69–76, 2016.

OTHER
PUBLICATIONS

11. **E. Billur**, B. Çetin, M. Gürleyik. “Yeni Nesil Yüksek Dayanımlı Çelikler: Gelişmeler, Trendler ve Kısıtlar” (New Generation Advanced High Strength Steels: Trends and Constraints, in Turkish), *International Journal of Scientific and Technological Research*, 2(1):50–62, 2016.

- o **3-parts series** in *STAMPING Journal*, titled: “Three generations of advanced high-strength steels for automotive applications”:
10. **E. Billur**, T. Altan, “Part III: The third generation”, Mar/Apr 2014 issue, pp 12-13.
9. **E. Billur**, J. Dykeman, T. Altan, “Part II: The second generation”, Jan/Feb 2014 issue, pp 12-13.
8. **E. Billur**, T. Altan “Part I: The first generation”, Nov/Dec 2013 issue, pp 16-17.

7. **E. Billur**, T. Altan “Determining material properties and batch-to-batch variations with bulge testing”, in *STAMPING Journal*, Sep/Oct 2013 issue, pp 16-17.
6. **E. Billur**, T. Altan “Warm Forming of Aluminum Alloys in the Auto Industry”, in *STAMPING Journal*, Jul/Aug 2013 issue, pp 20-25.

- o **2-parts series** in *STAMPING Journal*, titled: “Exploring the 3rd International Conference on Hot Stamping Technology”:
5. **E. Billur**, T. Altan, “Part II: New heating and forming equipment”, Jan/Feb 2012 issue, pp 10-11.
4. **E. Billur**, T. Altan, “Part I: New applications”, Oct/Dec 2011 issue, pp 12-13.

- o **3-parts series** in *STAMPING Journal*, titled: “Die Materials and Wear in Stamping AHSS”:
3. **E. Billur**, T. Altan, “Part III: Research results and recommended die materials and coatings”, May/Jun 2010 issue, pp 12-13.
2. **E. Billur**, T. Altan, “Part II: Tests for evaluating galling, wear of tool materials and coatings”, Mar/Apr 2010 issue, pp 10-11.
1. **E. Billur**, T. Altan, “Part I: Die wear and die coatings”, Jan/Feb 2010 issue, pp 8-9.

PRESENTATIONS
& SEMINARS

12. **E. Billur**, “Yeni Nesil Çelikler ve Sıcak Şekillendirme”, (New Generation Steels and Hot Stamping / in Turkish), Tofaş Bilgilendirme Semineri, June 15, 2016, Tofaş Akademi, Bursa, Turkey.
11. **E. Billur**, “Hot Stamping of Steel & Warm Forming of Aluminum in Automotive Industry”, presented in Hot Forming Seminar on October 29, 2015, St. Chamond, France.
10. **E. Billur**, B. Çetin, “Otomotiv ve Savunma Sanayinde Kullanılan Yüksek Dayanımlı Çelikler”, (High Strength Steels used in Automotive and Defense Industries / in Turkish), Seminar at Bilkent University on February 25, 2015, Ankara, Turkey.
9. **E. Billur**, “Press Hardening Overview”, presented in AP&T Future Forming Seminars on April 10, 2014, in Shanghai, China and on April 14, 2014, in Yokohama, Japan.
8. **E. Billur**, “Scientific Outlook on Press Hardening”, presented in AP&T Micro Seminar on March 25, 2014, Bursa, Turkey.

7. **E. Billur**, T. Altan, “*Scientific Outlook on Hot Stamping Technology*”, presented at AP&T Press Hardening Seminar, September 11, 2013, Detroit, MI.
6. **E. Billur**, T. Altan, “*R&D in Hot Stamping and Simulation of Hot Stamping*”, presented at Schuler Hot Stamping Seminar, May 14, 2013, Dearborn, MI.
5. H. Porzner, M. Skrikerud, S. Li, O. Morisot, M. Holecek, T. Altan, **E. Billur**, “*Virtual Prototyping Hot Forming Engineering with Virtual Manufacturing*”, presented in AP&T Press Hardening Seminar, September 19, 2012, Dearborn, MI.
4. **E. Billur**, T. Altan, “*Progress on the FEM Simulations of the Hot Stamping Process*”, Festkolloquium – Virtueller Engineering- und Planungsprozess in der Prozesskette Karosserie, September 23, 2011, Munich, Germany.
3. T. Altan, **E. Billur**, “*Global Trends in Metal Forming Technology*”, Aida Technical Symposium, May 3-4, 2011, Dayton, OH.
2. T. Altan, **E. Billur**, “*Forming of Advanced High Strength Steels (HSS & A/UHSS) in the Automotive industry*”, Aida Technical Symposium, May 3-4, 2011, Dayton, OH.
1. **E. Billur**, L. Liu, A. Tekin, T. Altan, “*Optimization of Geometry for Shear Ram Type Blowout Preventers (BOP)*”, SimTECH Seminar, September 15, 2010, Singapore.

TEACHING
EXPERIENCE

At Atılım University:

- **AE308** - *Manufacturing and Material Technologies in Automotive Industry*, (Spring 2014, 2015, 2016).
- **AE310** - *System Dynamics and Control*, (Spring 2016).
- **AE401** - *Capstone Project*, (Fall 2014, 2016).
- **AE404** - *Transmission Systems and Design*, (Spring 2014, 2015, 2016).
- **AE405** - *Vehicle Dynamics*, (Fall 2015, 2016).
- **AE414** - *Active and Passive Automobile Safety*, (Spring 2014, 2015, Fall 2016).
- **AE417** - *Introduction to Finite Element Analysis*, (Fall 2014, 2015).

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