Curriculum Vitae

personal data	Name:	Dr.-Ing. Marcel Graf
	Birthday:	29.06.1983
	Place of birth:	Karl-Marx-Stadt (now Chemnitz)
	Nationality:	German
	Family status:	divorced, 1 son & 1 daughter
	Contact data:	
	office:	TU Chemnitz Professorship of Virtual Production Engineering Reichenhainer Straße 70 09126 Chemnitz (Germany) marcel.graf@mb.tu-chemnitz.de
	privat:	Abendleite 2 09114 Chemnitz (Germany)
Eduction	*habilitation*	
	05/2015 – estimated 08/2019	Habilitation at faculty mechanical engineering, TU Chemnitz Title: „Material characterisation and modelling for numerical forming simulations“
	stays abroad	
	04/2018	Research stay abroad on Advanced Manufacturing Technology Excellence Centre of Universiti Teknologi MARA (Malaysia)
	10/2017 – 11/2017, 10/2016 – 12/2016	
	PhD-thesis	
	10/2008 – 08/2012	PhD at Institute of Metal Forming, TU Bergakademie Freiberg Title: „Modelling of forming behaviour of oxide scale along the process chain hot strip rolling“
	study	
	10/2003 – 09/2008	Diploma study mechanical engineering at TU Bergakademie Freiberg Specialisations: construction and development technology; metallurgy, foundry and forming machines
	school:	
	08/1996 – 06/2002	Abitur, Secondary school in Zschopau
Career	since 05/2015	Research associate, Professorship of Virtual Production Engineering, TU Chemnitz
	01/2013 – 12/2014	Deputy director, Institute of Metal Forming, TU Bergakademie Freiberg
	01/2013 – 12/2014	Group leader bulk forming and long products, Institute of Metal Forming, TU Bergakademie Freiberg
	10/2008 – 04/2015	Research associate, Institute of Metal Forming, TU Bergakademie Freiberg

	06/2007 – 08/2008	Student Assistant, Institute of metallurgy, foundry and forming machines, TU Bergakademie Freiberg
Language skills	German	Native Language
	English	Fluent in spoken and written
	Russian	Basics
Computing skills	Office	MS Office Products
	CAD	Pro/Engineer, Siemens NX 10, PTC Creo 3.0, SolidWorks
	FEA	Simufact.forming/GP, LS-Dyna, ANSYS
	CFD	Autodesk Moldflow, ANSYS Fluent
Research activities	since 12/2018	Reviewer of the Journal "Metals"
	since 08/2017	Keynote speaker of International Conference on Advances in Mechanical Engineering
	03/2016	Member of the research committee MEFORM 2016 „Production and Further Processing of Flat Products"
	02/2016	Seminar leader VDI „Basics of materials technology"
	since 10/2015	Reviewer of „Material Science Forum"
	since 06/2015	Reviewer of the Journal „Materials & Design"
	since 10/2015	Scientific instructor for Steel-Academy of VDEh-Seminar „Open die forming"; topics „oxide scale", „heat treatment" and „tool design"
	since 02/2015	Seminar leader VDI "Basics of cold bulk forming technology"
	since 02/2014	Co-Chairman und research committee „European Oxide Scale Conference" in London
	since 11/2013	Scientific instructor VDI "Cold extrusion "; topic „Basics in forming technologies"

Chemnitz, den 01.03.2019

Marcel Graf

Publication list

Papers with scientific quality assurance	12/2018	M. Graf, S. Härtel, A. Hälsig, P. Mayr, B. Awiszus: Thermo-Mechanical Modelling of Wire-Arc Additive Manufacturing (WAAM) of Semi-Finished Products. Metals – Special Issue "Arc-based Additive Manufacturing", 8 (12), 1009; https://doi.org/10.3390/met8121009
	11/2018	M. Graf, M. Ullmann, G. Korpala, H. Wester, B. Awiszus, R. Kawalla, B.-A. Behrens: Forming and Oxidation Behavior During Forging with Consideration of Carbon Content of Steel. In: Metals, MDPI AG, Volume 8/12.2018 996 (reviewed). ISBN/ISSN: 2075-4701. https://www.mdpi.com/2075-4701/8/12/996
	05/2018	M. Graf, S. Härtel, C. Binotsch, B. Awiszus: Virtual Manufacturing as Tool for Material and Process Developments and Optimizations; Journal of Mechanical Engineering, Vol 5-4. 2018, Special Issue 2018: Advances in Engineering and Technology, pp. 33-59; ISBN/ISSN: 1823-5514
	04/2018	M. Graf, K. P. Pradjadhiana, A. Hälsig, Y. H. P. Manurung, B. Awiszus: Numerical simulation of metallic wire arc additive manufacturing (WAAM). In: AIP Conference Proceedings 1960, 140010 (2018). https://doi.org/10.1063/1.5035002
	03/2018	M. Graf, S. Härtel, A. Bauer, W. Förster, D. Bublikova, M. F.-X. Wagner, B. Awiszus, B. Masek: Development of a Quenching-Partitioning Process Chain for Forging Components; Materials Science Forum, Vol. 918, pp. 85-92, ISSN: 1662-9752
	03/2018	J. Hauri, M. Graf, B. Awiszus, R. Kawalla: Closing of Shrinkage Cavities by Means of Open-Die Forging; Materials Science Forum, Vol. 918, pp. 77-84, ISSN: 1662-9752
	03/2018	S. Härtel, M. Graf, B. Awiszus, K. G. Abstoss, R. Hild: Novel Approach for the Determination of the Taylor-Quinney Coefficient; Materials Science Forum, Vol. 918, pp. 103-109, ISSN: 1662-9752
	02/2018	B.-A. Behrens, A. Chugreev, B. Awiszus, M. Graf, R. Kawalla, M. Ullmann, G. Korpala, H. Wester: Sensitivity Analysis of Oxide Scale Influence on General Carbon Steels during Hot Forging; Metals 2018, *8*(2), 140; doi:10.3390/met8020140
	01/2018	M. S. Sulaiman, Y. H. P. Manurung, M. Graf, A. Bauer: Analysis of Weld Induced Distortion of Butt Joint using Simulation and Experimental Study. Journal of Mechanical Engineering Vol SI 5(2), pp. 78-89, 2018. ISSN 1823- 5514, eISSN 2550-164X
	01/2018	O. Yahya, Y. H. P. Manurung, M.S. Sulaiman, K. P. Prajadhiana, A. R. Omar, W. Kuntjoro, H. v. Werde, A.

		Bauer, M. Graf: Virtual Manufacturing for Prediction of Martensite Formation and Hardness Value induced by Laser Welding Process using Subroutine Algorithm in MSC Marc/Mentat. Journal of Mechanical Engineering Vol 5(2), pp. 107-125, 2018. ISSN 1823- 5514, eISSN 2550-164X
	01/2018	K. P Prajadhiana, Y. H. P. Manurung, M. Z. Zainir, O. Yahya, J. Saedon, M. Shahriman, A. R. Omar, W. Kuntjoro, K. Kasim, D. P. Ishak, A. Bauer, M. Graf: Comparative Distortion Analysis of Welded T-Joint between 2D-Shell and 3D-Solid Element using FEA with Experimental Verification. Journal of Mechanical Engineering Vol SI 5(2), pp. 99-115, 2018. ISSN 1823-5514, eISSN 2550-164X
	10/2017	G. Korpała, M. Ullmann, M. Graf, H. Wester, A. Bouguecha, B. Awiszus, B.-A. Behrens, R. Kawalla: Modelling the influence of carbon content on material behavior during forging; AIP Conference Proceedings 1896, 190013, 2017; doi.org/10.1063/1.5008226
	10/2017	B.-A. Behrens, R. Kawalla, B. Awiszus, A. Bouguecha, M. Ullmann, M. Graf, C. Bonk, A. Chugreev, H. Wester: Numerical Investigation of the Oxide Scale Deformation Behaviour with Consideration of Carbon Content during Hot Forging; Procedia Engineering 207, 2017, pp. 526 – 531; 10.1016/j.proeng.2017.10.816
	07/2017	S. Härtel, M. Graf, M. Ullmann, T. Lehmann: Influence of tension-compression anomaly during bending of magnesium alloy AZ31; Materials Science & Engineering A 705, 2017, pp. 62 – 71; http://dx.doi.org/10.1016/j.msea.2017.08.066
	04/2017	M. Graf, S. Härtel, C. Binotsch, B. Awiszus: Forging of Lightweight Hybrid Metallic-Plastic Components; Procedia Engineering 184, 2017, pp. 497 – 505; doi: 10.1016/j.proeng.2017.04.120
	04/2017	S. Härtel, M. Graf, T. Gerstmann, B. Awiszus: Heat Generation during Mechanical Joining Processes – by the Example of Flat-Clinching; Procedia Engineering 184, 2017, pp. 251 – 265; doi: 10.1016/j.proeng.2017.04.093
	12/2016	M. Graf, S. Härtel, A. Feuerhack, W. Förster, B. Awiszus: Schmieden von hybriden Metall-Kunststoff- und Metall-Metall-Verbunden; Proceedings SFU 2016, S. 204 - 213; ISBN: 978-3-86780-503-2
	03/2016	C. Leinenbach, C. Czaderski, J. Michels, M. Graf, R. Kawalla: Development of Rolling Technology for an Iron-based Shape-Memory-Alloy; Material Science Forum "Production and Further Processing of Flat Products, Trans Tech Publications, Vols. 835 - 866, 2016, pp. 79 - 86; ISBN 978-3-03838-615-8

	01/2016	J. Dembińska, M. Graf, M. Ullmann, K. Neh, B. Awiszus, R. Kawalla: Property Oriented Wire Rolling Technology for Mg-Al Alloys; Key Engineering Materials - Advanced Materials and Processes of Metalworking, Trans Tech Publications, Vol. 684, 2016, pp. 42 - 56; ISBN 978-3-03835-522-9
	03/2015	M. Graf, M. Ullmann, R. Kawalla: Property-oriented production of forged magnesium components; Materials Today: Proceedings 2S, 2015, pp. 76 - 84, doi: 10.1016/j.matpr.2015.05.022
	03/2015	M. Ullmann, M. Graf, R. Kawalla: Static recrystallization kinetics of a twin-roll cast AZ31 alloy; Materials Today: Proceedings 2S, 2015, pp. 212 - 218; doi: 10.1016/j.matpr.2015.05.012
	03/2015	K. Kittner, A. Feuerhack, W. Förster, C. Binotsch, M. Graf: Recent developments for the production of Al-Mg compounds; Materials Today: Proceedings 2S 2015, pp. 225 - 232, doi: 10.1016/j.matpr.2015. 05.019
	03/2015	M. Graf, M. Ullmann, R. Kawalla: Leichtbaupotenzial von Magnesiumlegierungen in der Massivumformung; SchmiedeJOURNAL, 2015, S. 38 - 42
	10/2014	M. Graf, M. Ullmann, R. Kawalla: Influence of initial state on forgeability and microstructure development of magnesium alloys; Procedia Engineering 81, 2014, pp. 546 - 551; doi: 10.1016/j.proeng.2014.10.037
	10/2014	M. Ullmann, M. Graf, M. Schmidtchen, R. Kawalla: Metadynamic recrystallization kinetics of twin roll cast AZ31 alloy during hot deformation; Procedia Engineering 81, 2014, pp. 1559 - 1564; doi: 10.1016/ j.proeng. 2014.10.190
	05/2014	M. Graf, R. Kawalla: Approaches for a fast analysis system for hot rolling processes; steel research int. 85, No. 9, 2014, pp. 1364 - 1368; doi: 10.1002/srin. 201300342
	06/2013	M. Graf: Modellierung des Umformverhaltens von Zunder entlang der Prozesskette Warmband; Freiberger Forschungsheft B 353; Zugl.: Freiberg, TU Bergakademie, 2013, ISBN 978-3-86012-459-8
	03/2013	M. Graf, R. Kawalla: Bestimmung des Umformverhaltens von Zunder auf der Stahloberfläche; SchmiedeJOURNAL, 2013, S. 56 - 59
	02/2012	M. Graf, R. Kawalla: Scale Behaviour and Deformation Properties of Oxide Scale during Hot Rolling of Steel; Key Engineering Materials Vols. 504 - 506, 2012, pp. 199 - 204; doi:10.4028/ www.scientific.net/KEM.504-506.199

	10/2011	M. Graf, R. Kawalla: Deformation Behaviour and Mechanical Properties of Oxide Scales during Hot Metal Forming Processes; steel research international - Special Edition 10th ICTP 2011, Wiley-VCH Verlag, Weinheim, 2011, pp. 78 - 81; ISBN 978-3-514-00784-0
	05/2011	D. Szeliga, M. Graf, R. Kawalla, M. Pietrzyk: Identification of Material Properties Based on Rolling Process at 4-Stand Laboratory Mill; AIP Conference Proceedings, Vol. 1353, Issue 1, 2011, pp. 391 - 397; doi: 10.1063/1.3589547
	10/2010	M. Graf, R. Kawalla: Simulation system for fast analysis of multistage hot rolling processes strip and rod/wire; steel research international 81, No. 9, Wiley-VCH Verlag, Weinheim, 2010, pp. 122 - 125; ISBN 978-3-514-00774-1
	06/2010	R. Kawalla, M. Graf, K. Tokmakov: Simulation system of multistage hot rolling process of flat products; METALURGIJA 49, 2010, pp. 175 – 179; ISSN 0543-5846
	03/2009	M. Graf, J. Bast, W. Simon: Optimierung und Weiterentwicklung des Kernschießverfahrens und konstruktive Umsetzung; Freiberger Forschungsheft A 899 Maschinenbau, 2009, S. 119 - 127; ISBN 978-3-86012-381-2
Conference papers	06/2016	D. Denninger, M. Graf, M. Berger, A. Awiszus: Prozessorientierte Synthese der neuartigen Rotorflechtmaschine „D-3F“ zur konturadaptiven Fadenablage; 15. Chemnitzer Textiltechnik Tagung - Textiltechnik als Schlüsseltechnologie der Zukunft, Chemnitz, 2016
	03/2016	M. Graf, M. Ullmann: Einfluss des Materialzustandes einer EN-AW 6.xxx-Legierung auf das Umformverhalten und die FE-Berechnung; SAXSIM 2016, TU Chemnitz, Chemnitz, 2016; ISBN 978-3-944640-73-0
	10/2015	J. Dembińska, M. Graf, P. Adamyanets, M. Ullmann, R. Kawalla, B. Awiszus: Basics for caliber rolling technology of magnesium wires; 10th International Conference on Magnesium Alloys and Their Applications (Mg 2015), Jeju (South Korea), 2015
	10/2015	M. Ullmann, M. Graf, R. Kawalla: Simulation of material flow and microstructural evolution during the hot rolling of Twin Roll Cast AZ31 strips; 10th International Conference on Magnesium Alloys and Their Applications (Mg 2015), Jeju (South Korea), 2015
	09/2015	M. Graf, K. Kittner, R. Kawalla: Werkstoffanforderungen für die Bauteile und Werkzeuge in der Kaltmassiv-umformung; Werkstoffwoche 2015, Dresden, 2015; http://www.stahl-online.de/wp-

		content/uploads/2013/09/2015_Werkstoffwoche_Dresden_Werkstoff_Kaltmassivumformung_V3.pdf
	04/2014	M. Graf, D. Farrugia, R. Kawalla: Influence of the forming behaviour of scale on the friction conditions; International Science & Technology Congress, OMD 2014, Moscow (Russia), 2014, pp. 117 - 126; ISBN 978-5-905714-27-6
	02/2014	H. Saleh, M. Schmidtchen, M. Graf, R. Kawalla: Oxidation behavior of Twin Roll Cast (TRC) AZ31 magnesium alloy; European Oxide Scale Conference 2014 (OXI 2014), London (Great Britain), 2014
	09/2013	M. Graf, M. Ullmann, R. Kawalla: Magnesium – die Herausforderungen für die Massivumformung; VDI-Fachkonferenz Warmmassivumformung 2013, Düsseldorf, 2013
	03/2013	M. Schmidtchen, M. Graf: Neue Konzepte für die schnelle Simulation der Thermomechanischen Behandlung; Tagungsband MEFORM 2013, Freiberg, 2013, S. 40 - 68; ISBN 978-3-86012-449-9
	03/2013	M. Graf, R. Kawalla: Simulation der Zunderent-wicklung in Walzstraßen; Tagungsband MEFORM 2013, Freiberg, 2013, S. 125 - 134; ISBN 978-3-86012-449-9
	03/2013	M. Graf, R. Kawalla: Simulationssystem zur schnellen Analyse des mehrstufigen Warmwalzens von Band und Stabstahl-Draht; Tagungsband MEFORM 2013, Freiberg, 2013, S. 259 - 266; ISBN 978-3-86012-449-9
	02/2013	M. Graf, M. Ullmann, G. Korpala, R. Kawalla: Materialkennwerte als Basis für die numerische Simulation von Warmumformprozessen. Proceeding 22. Verformungskundliches Kolloquium, Planneralm, 2013, S. 49 - 55, ISBN 978-3-902078-18-6
	09/2012	M. Graf, R. Kawalla: Simulation der Warmmassivum-formung - Eine Herausforderung für die Werkstoffbe-schreibung; VDI-Fachkonferenz Warmmassivum-formung 2012, Köln, 2012
	10/2011	R. Kawalla, M. Graf, G. Korpała, W. Müller: Werkstoffkennwerte für die Massivumformung; Tagungsband MEFORM 2012, Freiberg, 2012, S. 1 - 14; ISBN 978-3-86012-434-5
	06/2011	M. Graf, R. Kawalla: Development of New Hot Rolled Materials and Technologies by Means of Numerical Simulation Systems; Conference “Innovative Technologies in Metal Forming”, Moscow (Russia), 2011, pp. 100 - 104; ISBN 978-5-87623-555-8
	05/2011	M. Graf, R. Kawalla: Fast Simulation System for Analyzing of Multistage Hot Rolling Process of Strip; Proceeding METEC InSteelCon 2011, Düsseldorf, 2011

	03/2011	R. Kawalla, M. Graf, M. Pietrzyk: Simulation von Umformprozessen zur Optimierung der Mikrostruktur und Eigenschaften; 26. Aachener Stahlkolloquium, Herausgeber W. Bleck, Verlagshaus Mainz, Aachen, 2011, S. 177 - 188; ISBN 978-3-86130-258-6
	03/2011	R. Kawalla, M. Graf, W. Müller: Umformtechnische Simulation der gesamten Prozesskette vom Halbzeug bis zum Bauteil – Stand und Bedarf; Tagungsband MEFORM 2011, Freiberg, 2011, S. 1 - 8; ISBN 876-3-86912-421-5
	02/2011	R. Kawalla, M. Graf: Simulation der Warmum-formung von gewalzten Halbzeugen; 14. Workshop „Simulation in der Umformtechnik“, TU Dortmund, Dortmund, 2011
	02/2011	R. Kawalla, G. Goldhahn, M. Graf: Simulation mehrstufiger Warmwalzprozesse von Band- und Stabmaterial; Umformtechnik – Innovationen aus der Industrie und der Wissenschaft, 20. Umform-technisches Kolloquium Hannover, Hannover, 2011, S. 187 - 198; ISBN 978-3-00-033656-0
	08/2010	M. Graf, M. Schmidtchen, R. Kawalla: Fast Simulation System for Analysis of Multistage Hot Rolling Process of Flat Products; Conference Proceeding MSE 2010, Darmstadt, 2010
	08/2010	M. Schmidtchen, M. Graf, R. Kawalla: Fast Simulation of Inhomogeneous Material Evolution in Hot and Cold Rolling of Flat Products; Conference Proceeding MSE 2010, Darmstadt, 2010
	03/2010	R. Kawalla, M. Graf, K. Tokmakov: Numerische Systeme für „denkende Walzanlagen“; Tagungsband MEFORM 2010, Freiberg, 2010, S. 238 - 251; ISBN 978-3-86012-393-5
	02/2010	P. Suwanpinij, K. Mukherjee, M. Graf, U. Prahl, W. Bleck, R. Kawalla: Towards Modelling of Phase Transformation and Mechanical Properties in Hot Rolled Dual Phase Steel; Supplemental Proceedings Vol. 1: TMS2010 - Materials Processing and Properties, Seattle, 2010, pp. 711 - 719; ISBN 978-0-87339-751-3
	11/2009	R. Kawalla, K. Tokmakov, M. Graf: Simulation mehrstufiger Warmwalzprozesse von Band- und Stabmaterial; Sächsische Fachtagung Umformtechnik 2009, Chemnitz, 2009, S. 391 - 402; ISBN 978-3-937524-93-1
	06/2009	J. Bast, P. Schmidt, M. Graf, W. Simon: A Study of a New Core Shooting Process for the Improvement of Core Quality; Conference Proceeding, WORLD TECHNICAL FORUM 2009, Brno (Tschechische Republik), 2009
		R. Kawalla, M. Schmidtchen, M. Graf, K. Tokmakov:

	03/2009	Simulation mehrstufiger Warmwalzprozesse von Band, Tagungsband MEFORM 2009, Freiberg, 2009, S. 1 - 12; ISBN 978-3-86012-363-8
	01/2009	R. Kawalla, K. Tokmakov, M. Graf: Simulation system for the analysis of multistage metal forming processes; Conference Proceeding KomPlasTech, Krynica-Zdrój (Polen), 2009
Patent	09/2015	M. Graf, S. Härtel, B. Awiszus, G. Lehmann: Verfahren zur umforminduzierten Schweißnahtbehandlung; amtliches Aktenzeichen: 10 2015 116 191.5; Anmeldetag: 24.09.2015
	05/2012	M. Graf, R. Kawalla: Verfahren zur Verbesserung der Oberflächenqualität von Halbzeugen aus Stahl bei der Warmumformung; Nummer: 10 2011 017 371, 2012

Teaching

Lecture	since SS 2016	„Forming machines I, II“, Institute for Machine Elements, Engineering Design and Manufacturing, TU Bergakademie Freiberg
	since WS 2015/2016	Semi-finished products in the lecture „manufacturing theory of Prof. Dr.-Ing. habil. Dipl. Math. B. Awiszus, TU Chemnitz
	since WS 2015/2016	Bulk forming processes in the lecture „manufacturing technology“ of Prof. Dr.-Ing. habil. Dipl. Math. B. Awiszus, TU Chemnitz
	SS 2013 – SS 2015	„Forming tools“ of Prof. em. Dr.-Ing. habil. G. Lehmann, TU Bergakademie Freiberg
	WS 2011/2012 – WS 2014/2015	„Oxide scale“ in the lecture „Forming technology II/3-technology of flat products“ of Prof. Dr.-Ing. R. Kawalla, TU Bergakademie Freiberg
Internship	SS 2013 – SS 2014	Production/production measurement technology, TU Bergakademie Freiberg
	SS 2010 – SS 2014	Basics of material technology II, TU Bergakademie Freiberg
Workshops	05/2016	Scientific Workshop of Simufact Engineering GmbH during the 17. RoundTable – Simulating Manufacturing
	02/2016	Seminar leader VDI „Basics of material technology“
	10/2015	Scientific instructor for Steel-Academy of VDEh-Seminar „Open die forming“; topics „oxide scale“, „heat treatment“ and „tool design“
	09/2014	Seminar leader„Die forging of crankshaft“
	03/2014	Scientific instructor forging expert committee „Oxide scale – an unavoidable phenomenon during hot forming processes “
	since 02/2014	Seminar leader VDI „Basics of cold bulk forming technology”
	since 11/2013	Scientific instructor VDI “Cold extrusion ”; topic „Basics in forming technologies“