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Trockenumformen niedriglegierter Stahlwerkstoffe durch Vollvorwärtsfließpressen mit selbstschmierender Werkzeugbeschichtung und strukturierten Halbzeugen

Dry forming of low alloy steel materials by full forward impact extrusion with self-lubricating tool coatings and structured workpieces

Publikationsverzeichnis

List of Publications

a) Beiträge mit wiss. Qualitätssicherung / *Articles with scientific quality assurance*

K. Bobzin, T. Brögelmann, N.C. Kruppe, T. Bergs, D. Trauth, R. Hild, R. Mannens, D.C. Hoffmann

Self-Lubricating Physical Vapor Deposition Coatings for Dry Cold Massive Forming

<https://doi.org/10.1002/srin.201900475>

Steel Research International, Reprint, Special Issue zur Tooling 2019

R. Hild, R. Mannens, D. Trauth, P. Mattfeld, T. Bergs, D.C. Hoffmann, N.C. Kruppe, T. Brögelmann, K. Bobzin

Investigation of Friction and Adhesion Behavior of Textured Workpieces and Coated Tools Under Dry Tribological Contact

https://doi.org/10.1007/978-3-030-05861-6_151

TMS 2019, San Antonio, Texas, USA, In: Proceedings (2019) 1615-1628

R. Hild, T. Bergs, P. Mattfeld, D. Trauth, F. Klocke, D.C. Hoffmann, N.C. Kruppe, T. Brögelmann, K. Bobzin

Analysis of wear phenomena during forward extrusion under dry friction conditions

<https://doi.org/10.1016/j.wear.2019.01.127>

Wear 426-427 (2019) 1362-1370

R. Hild, A. Feuerhack, D. Trauth, D.C. Hoffmann, N.C. Kruppe, T. Brögelmann, K. Bobzin, F. Klocke

Influence of surface integrity on the plastic flow in analogous testing of 42CrMo4

<https://doi.org/10.1051/mateconf/201819014009>

ICNFT 2018, Bremen, Germany, In: MATEC Web of Conferences 190, 14009 (2018)

K. Bobzin, T. Brögelmann, N.C. Kruppe, D.C. Hoffmann, F. Klocke, P. Mattfeld, D. Trauth, R. Hild

Tribological studies on self-lubricating (Cr,Al)N+Mo:S coatings at elevated temperature

<https://doi.org/10.1016/j.surfcoat.2018.06.067>

Surface & Coatings Technology 353 (2018) 282-291

R. Hild, A. Feuerhack, D. Trauth, M. Arghavani, N.C. Kruppe, T. Brögelmann, K. Bobzin, F. Klocke

Forward impact extrusion of surface textured steel blanks using coated tooling

<https://doi.org/10.1063/1.5008165>

ESAFORM 2017 Dublin, Ireland (2017), In: AIP Conference Proceedings 1896

R. Hild, A. Feuerhack, D. Trauth, M. Arghavani, N.C. Kruppe, T. Broegelmann, K. Bobzin, F. Klocke

Suitability of friction laws to simulate the influence of surface textures on the process force in cold forging

<https://publications.rwth-aachen.de/record/740048>

THE A Coatings 2017, Thessaloniki, Greece, In: Proceedings (2017) 103-112

K. Bobzin, T. Brögelmann, N.C. Kruppe, M. Arghavani, D.C. Hoffmann, F. Klocke, P. Mattfeld, D. Trauth, D. Trauth, R. Hild

Influence of the bias voltage on the mechanical and tribological behavior of self-lubricating hybrid dcMS/HPPMS (Cr,Al)N coatings

<https://publications.rwth-aachen.de/record/740038>

THE A Coatings 2017, Thessaloniki, Greece, In: Proceedings (2017) 149-158

K. Bobzin, T. Brögelmann, N.C. Kruppe, S. Basturk, F. Klocke, P. Mattfeld, D. Trauth, R. Hild
Synthesis, characterization, and tribological evaluation of HPPMS (Cr_{1-x}Al_x)N + MoSy coatings

<http://dx.doi.org/10.1016/j.surfcoat.2016.07.089>

Surface & Coatings Technology 308 (2016) 383–393

D. Trauth, S. Bastürk, R. Hild, P. Mattfeld, T. Brögelmann, K. Bobzin, F. Klocke

Evaluation of the shear stresses on surface structured workpieces in dry forming using a novel pin-on-cylinder tribometer with axial feed

<https://doi.org/10.1007/S12289-016-1301-Z>

International Journal of Material Forming, 10 (2017), 557-565

D. Trauth, R. Hild, P. Mattfeld, S. Bastuerk, T. Broegelmann, K. Bobzin, F. Klocke

Advances in dry metal forming of low alloyed steels for cold forging using a (Cr,Al)N tool coating and surface structures on workpieces

<http://publications.rwth-aachen.de/record/660658>

THE A Coatings 2016, Hannover, Germany, In: Proceedings (2016) 185-192

K. Bobzin, T. Brögelmann, R. H. Brugnara, N. Kruppe, S. Bastürk, F. Klocke, P. Mattfeld, R. Hild, D. Trauth

Influence of the Chemical Composition on the Properties of HPPMS (Cr_{1-x},Al_x)N/WSy Coatings for the Application in Dry Cold Forging Processes

<http://publications.rwth-aachen.de/record/669077>

THE A Coatings 2016, Hannover, Germany, In: Proceedings (2016) 161-168

K. Bobzin, T. Brögelmann, S. Basturk, F. Klocke, P. Mattfeld, D. Trauth, P. Polcik, S. Kolozsvári

Influence of the Composition on the Properties of (Cr_{1-x},Al_x)N/Mo_{0.5}S_{0.5} PVD Coatings

<https://doi.org/10.1002/adem.201500499>

Advanced Engineering Materials 18, No. 6 (2016) 1036-1043

b) Sonstige / Other

K. Bobzin, F. Klocke, T. Brögelmann, A. Feuerhack, N. C. Kruppe, R. Hild, D. C. Hoffmann
Dry forming of low alloy steel materials by full forward impact extrusion with self-lubricating tool coatings and structured workpieces

https://www.trockenumformen.de/app/download/10606329/DMFOAJ_6_2020_069-098_Bobzin.pdf

Dry Met. Forming OAJ FMT 6 (2020) 69-98

K. Bobzin, T. Brögelmann, N.C. Kruppe, T. Bergs, R. Hild, A. Feuerhack, D.C. Hoffmann
Self-lubricating PVD Coatings in Interaction with Textured Workpiece Surfaces for Bulk Metal Forming

https://www.trockenumformen.de/app/download/10203178/6_DMFOAJ_52019_Bobzin_Hoffmann_IOT+Aachen_039-045.pdf

Dry Met. Forming OAJ FMT 5 (2019) 39-45

T. Bergs, R. Hild, A. Feuerhack, M. Müller, K. Bobzin, T. Brögelmann, N.C. Kruppe, D.C. Hoffmann

Modellierung des Tribosystems beim trockenen Vollvorwärtsfließpressen mithilfe eines erweiterten Reibmodells

https://www.trockenumformen.de/app/download/10203140/1_DMFOAJ_52019_Hild_WZL_Aachen_001-008.pdf

Dry Met. Forming OAJ FMT 5 (2019) 1-8

K. Bobzin, T. Brögelmann, N.C. Kruppe, D.C. Hoffmann, T. Bergs, D. Trauth, R. Mannens, R. Hild

Self-lubricating PVD coatings for dry cold massive forming

<http://publications.rwth-aachen.de/record/764189>

Tooling 2019, Aachen, Germany, In: Proceedings (2019) 1615-1628

K. Bobzin, T. Brögelmann, N.C. Kruppe, D.C. Hoffmann, F. Klocke, T. Bergs, D. Trauth, R. Mannens, R. Hild

Tribologie selbstschmierender PVD-Schichten für die trockene Kaltmassivumformung

<http://publications.rwth-aachen.de/record/753242>

59. Tribologie-Fachtagung 2018 der GfT, Göttingen, Germany, In: Proceedings (2018) 47/1–47/12

F. Klocke, R. Hild, D. Trauth, K. Bobzin, T. Brögelmann, N.C. Kruppe, D. C. Hoffmann
Einfluss von Oberflächenstrukturierungen auf die Stempelkraft beim Vollvorwärtsfließpressen von 16MnCr5

https://www.trockenumformen.de/app/download/9871230/DMFOAJ_4_2018_025-030-Klocke.pdf

Dry Met. Forming OAJ FMT 4 (2018) 25-30

K. Bobzin, T. Brögelmann, N.C. Kruppe, M. Arghavani, D.C. Hoffmann, F. Klocke, P. Mattfeld, D. Trauth, R. Hild

Mechanical and tribological characterization of self-lubricating (Cr_{1-x}Al_x)N coatings for deposition on complex-shaped forging tools

https://www.trockenumformen.de/app/download/9871673/DMFOAJFMT_3_2017_081-089_Arghavani.pdf

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A. Almohallami, M. Arghavani, F. Böhmermann, H. Freiße, M. Herrmann, S.A. Mousavi, S. Schöler, P. Scholz, J. Tenner, M. Teller, G. Umlauf, D. Wulff, D. Yilkiran, H.J. Maier

How dry is dry? - A critical analysis of surface conditions used in dry metal forming

https://www.trockenumformen.de/app/download/9871684/DMFOAJFMT_3_2017_090-094_AK_Charakterisierung_SPP_1676_Maier.pdf

Dry Met. Forming OAJ FMT 3 (2017) 90-94

R. Hild, A. Feuerhack, D. Trauth, M. Arghavani, N. Kruppe, T. Brögelmann, K. Bobzin, F. Klocke

Dry metal forming of low-alloy steels by full forward extrusion using innovative surface textures on workpieces and HPPMS coatings on tools

<https://publications.rwth-aachen.de/record/697831>

ESAFORM 2017, Dublin, Ireland, Vortrag

F. Klocke, R. Hild, D. Trauth, K. Bobzin, T. Brögelmann, N. Kruppe, M. Arghavani
Trockenumformung von 42CrS4 mittels Vollvorwärtsfließpressen durch strukturierte Halb-
zeugoberflächen und selbstschmierende Werkzeugbeschichtungen
https://www.trockenumformen.de/app/download/9871520/DMFOAJFMT_3_2017_007-012_Hild.pdf

Dry Met. Forming OAJ FMT 4 (2017) 7-12

K. Bobzin, T. Brögelmann, N.C. Kruppe, M. Arghavani, S. Bastürk, F. Klocke, P. Mattfeld, D. Trauth, R. Hild
HPPMS (Cr_{1-x}Al_x)N+WSy Coatings for the Application in Dry Cold Forging of Steel: Synthesis and Raman Characterization

https://www.trockenumformen.de/app/download/9887073/DMFOAJFMT_2_2016_072-077_Arghavani.pdf

Dry Met. Forming OAJ FMT 2 (2016) 72-77

F. Klocke, R. Hild, D. Trauth, P. Mattfeld, K. Bobzin, T. Brögelmann, N. Kruppe
Recommendations for Dry Forming of 16MnCr5 and 42CrMo4 in Cold Forging

https://www.trockenumformen.de/app/download/9871918/DMFOAJFMT_2_2016_044-049_Klocke.pdf

Dry Met. Forming OAJ FMT 2 (2016) 44-49

K. Bobzin, T. Brögelmann, N.C. Kruppe, S. Bastürk, F. Klocke, P. Mattfeld, D. Trauth, R. Hild
HPPMS (Cr_{1-x}Al_x)N+MoSy Coatings for Lubricant-Free Cold Forging of Steel

<http://publications.rwth-aachen.de/record/669093>

ICMCTF 2016 San Diego, USA, Poster

F. Klocke, D. Trauth, R. Hild, P. Mattfeld, K. Bobzin, T. Brögelmann, S. Bastürk
Numerical Analysis of the Tribological Mode of Action in Cold Forming of Sinus Waved Surfaces Structures

https://www.trockenumformen.de/app/download/9888046/20_2015_DMFOAJFMT_1_2015_137-142.pdf

Dry Met. Forming OAJ FMT 1 (2015) 137-142

K. Bobzin, T. Brögelmann, N. C. Kruppe, S. Bastürk, F. Klocke, P. Mattfeld, D. Trauth
Tribological Behavior of (Cr_{1-x}Al_x)N/WSy PVD Tool Coatings for the Application in Dry Cold Forging of Steel

https://www.trockenumformen.de/app/download/9888062/22_2015_DMFOAJFMT_1_2015_152-158.pdf

Dry Met. Forming OAJ FMT 1 (2015) 152-158

K. Bobzin, T. Brögelmann, S. Bastürk, F. Klocke, P. Mattfeld, D. Trauth
Development of an in situ Plasma Treatment of X155CrMoV12 for a (Cr,Al)N PVD Tool Coating for Dry Metal Forming in Cold Forging

https://www.trockenumformen.de/app/download/9887955/08_2015_DMFOAJFMT_1_2015_057-062_Bobzin.pdf

Dry Met. Forming OAJ FMT 1 (2015) 57-62

F. Klocke, D. Trauth, P. Mattfeld, A. Shirobokov, K. Bobzin, T. Brögelmann, S. Bastürk
Multiscale FE-Studies of Contact Stresses of Dry and Lubricated Shot Peened Workpiece Surfaces

https://www.trockenumformen.de/app/download/9887912/03_2015_DMFOAJFMT_1_2015_011-016_Klocke.pdf

Dry Met. Forming OAJ FMT 1 (2015) 11-16