

Curriculum vitae

Personal Information

Date of birth: 07.11.1985
Place of birth: İzmir, Turkey
Nationality: Turkish



Career

04/2020 – Head of the Metallurgy Lab at the Department of Materials Science and Engineering, İzmir Institute of Technology, Turkey

Research topic: Recycling and refining of non-ferrous metals

10/2017 – 04/2020 Post-Doctoral Researcher at the Department of Materials Science and Engineering, Norwegian University of Science and Technology, Norway

Research topic: Recycling and refining of non-ferrous metals

10/2013 – 09/2017 Ph.D. Candidate, Research and Teaching Assistant at Institute of Process Metallurgy and Metal Recycling, RWTH Aachen University, Germany

Title of the dissertation: "Settling and Agglomeration Behaviour of Non-metallic Inclusions in Aluminium Melts"

- Definition and modelling of particle behaviour and hydrodynamics in crucible furnaces by analytical and experimental approaches

Other duties

- Management of a part of the project "Melt Cleanliness" activities of the IME in an open innovation and research centre "AMAP" with a consortium of 5 companies.
- Industrial projects about Powder synthesis of Titanium alloys and Recycling of Gold scraps (hydro & pyro-metallurgical routes)
- Co-Supervision of Master and Bachelor theses (in total: 8)
- Assistance in lectures:
 - Metallurgy and properties of non-metallic Inclusions in Al-melts*
 - Metallurgy and recycling of non-ferrous metals*
- Laboratory courses
 - Alloy production*
 - Sedimentation and cake filtration*

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04/2012 – 07/2012 Intern at BERZELIUS Stolberg GmbH, Stolberg, Germany

- Minimization of zinc losses in vacuum distillation furnaces
- Minimization of dissolved oxygen content in silver ingots
- Working in production and controlling the parameters in vacuum distillation furnaces

10/2011 – 10/2013 Master of Science Metallurgical Engineering at RWTH Aachen University

Title of the master thesis: "Agglomeration and Settling Behaviour of Non-metallic Inclusions in Aluminium Melts"

Title of the study integrated thesis: "Hydrometallurgical Recovery of Gold from Mining and Flotation Dumps"

01/2010 – 04/2013 Student Researcher at Institute of Process Metallurgy and Metal Recycling - RWTH Aachen University

Assistance in following project topics:

- Endogenous carbide generation in aluminium melts
- Synthesis of metallic cobalt, nickel and oxidic ruthenium and titanium nano particles
- Electro-refining process of solar grade silicon

06/2007 – 09/2007 Intern at at Akdöküm A.Ş. Izmir/Turkey

- Casting quality control (cast iron)
- Alloying quality control (cast iron)

06/2007 – 09/2007 Intern at at Izeltas A.Ş. Izmir /Turkey

- Cold forming quality control (steel alloys)

09/2005 – 02/2010 Bachelor of Science at Dokuz Eylül University, İzmir/Turkey

Title of the bachelor thesis: "Investigation on Selective Distillation of Black Dross and the Potential of Minimizing Magnesium Losses through Optimization of Salt Fluxes", written during the Erasmus program at IME/RWTH Aachen University

Languages

Turkish (Native)
English (Fluent)
German (Fluent)

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Publications

S. Akbari, M. Göknelma, B. Friedrich, Potential of Minimising Magnesium Losses in Black Dross through Optimisation of Salt Fluxes, EMC 2009 – European Metallurgical Conference, Innsbruck, Austria; June 28 - July 1; Volume 4, S. 1213 – 1234; ISBN 978-3-940276-20-9

M. Göknelma, B. Friedrich, Bath Movement Effect on Agglomeration of Inclusions in Aluminium Melts, IMMC'17 International Metallurgy and Materials Congress, Istanbul, Turkey, 2014, 684-696

M. Göknelma, J. Morscheiser, M. Badowski, T. Dang, P. L. Brun, S. Tewes, Observation on inclusion settling by LiMCA and PoDFA Analysis in Aluminium Melts, International Aluminium Journal, Vol. 91, April 2015, 56- 61

M. Badowski, M. Göknelma, J. Morscheiser, T. Dang, P. L. Brun, and S. Tewes, (2015) Study of Particle Settling and Sedimentation in a Crucible Furnace, in Light Metals 2015 (ed M. Hyland), John Wiley & Sons, Inc., Hoboken, NJ, USA. doi: 10.1002/9781119093435.ch162

M. Göknelma, D. Latacz and B. Friedrich, (2016) A Review on Prerequisites of a Set-Up for Particle Detection by Ultrasonic Waves in Aluminium Melts. Open Journal of Metal, 6, 13-24. doi: 10.4236/ojmetal.2016.61002

M. Göknelma, P. Le Brun, T. Dang, M. Badowski, J. Morscheiser, B. Friedrich, S. Tewes, Assessment of Settling Behavior of Particles with Different Shape Factors by LiMCA Data Analysis, in Light Metals 2015, Nashville, USA

M. Göknelma, A. Birich, S. Stopic, B. Friedrich, Review on Alternative Gold Recovery Reagents to Cyanide, Journal of Materials Science and Chemical Engineering, 2016, 4, 8-17

M. Göknelma, D. Celik, O. Tazegul, H. Cimenoglu, B. Friedrich, Characteristics of Ti6Al4V Powders Recycled from Turnings via the HDH Technique, Metals - Open Access Metallurgy Journal 8(5):336

M. Göknelma, T. S. Aarnæs, J. Maier, B. Friedrich, G. Tranell, Behaviour of Aluminium Carbide in Al-melts during Re-melting, in Light Metals 2019, San Antonio, USA

M. Göknelma, I. Meling, E. Soyulu, A. Kvithyld, G. Tranell, A Method for Assessment of Recyclability of Aluminum from Incinerated Household Waste, in Light Metals 2019, San Antonio, USA

C. Li, X. Zhang, M. Göknelma, W. Stets, B. Friedrich, A Quick Sampling Method for Identification of Particle Distribution in the Depth Direction of Al-melt, EMC 2019 – European Metallurgical Conference, Dusseldorf, Germany

M. Göknelma, K.E. Einarsrud, G. Tranell et al. Shape Factor Effect on Inclusion Sedimentation in Aluminum Melts. Metallurgical and Materials Trans. B 2020

M. Göknelma, F. Diaz, I.E. Öner, B. Friedrich, G. Tranell, 2020, An Assessment of Recyclability of Used Aluminium Coffee Capsules. In: Tomsett A. (eds) Light Metals 2020. The Minerals, Metals & Materials Series. Springer, Cham

M. Göknelma, T. S. Aarnæs, J. Maier, M. F. Renkel, K. E. Ekstrøm, B. Friedrich, G. Tranell, Behaviour of Al₄C₃ Particles during Flotation and Sedimentation in Aluminium Melts, Metallurgical and Materials Trans. B 2021

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A. Obali, K. A. Dilek, S. Akdi, D. Kavrar Ürk, M. Gokelma, The Influence of the Casting Speed in Horizontal Continuous Casting of Aluminium Alloy EN AW 6082 Light Metals 2021. The Minerals, Metals & Materials Series. Springer

Conference talks without manuscript

A Study on Inclusion Settling in Aluminium Melts, at Leichtmetallfachaussuss in Essen, 2015

Particle Dynamics in Aluminium Melts – A Metallurgical Point of View At Lagrangian transport: from complex flows to complex fluid in Lecce, 2016

Extracting REE from the ferric fraction of processed WEEE, at TMS 2018 in Phoenix, 2018

Removal of Carbonaceous Species in Aluminium Melts, at IMMC 19th International Metallurgy and Materials Congress in Istanbul, 2018

Extracting REE (Rare Earth Elements) from the ferric fraction of processed WEEE (Waste of Electrical and Electronic Equipment) at 4th Iron & Steel Symposium 2019 in Karabuk/Turkey

Pyrometallurgical treatment of E-waste, GetIn Cicero Online Workshop Affiliation, Organizer: RWTH Aachen University

Written Theses under my Supervision

As 1st Supervisor

Formation Mechanisms and Properties of Non-metallic Inclusions in Aluminium Melts, Lu Lin, May 2014

Agglomeration Behaviour of Non-metallic Inclusions in Aluminium Melts, Kankanti Kiran Prateek, December 2014

Ultrasonic Applications in Liquid Aluminium, Damien Latacz, July 2015

Production of Aluminium Matrix Composites with Al₂O₃, MgO·Al₂O₃ and MgO particles in different size ranges, Timon Paulus, January 2016

Investigation on Dispersion and Agglomeration Behaviour of Non-metallic Particles with Different Physical and Chemical Properties in Aluminium Melts, Fabian Botz, April 2016

Investigation on settling of particles with different physical properties by experimental and analytical approaches, Susanna Barberi, September 2016

Review and Improvement of Pyrometallurgical Recycling of Gold Jewellery Scraps and Wastes, Seckin Cakmakoglu, December 2016

Ti6Al4V Powder Synthesis via HDH method for Coating of Bio-materials, Dilara Celik, March 2017 (joint supervision with Istanbul Technical University within the Erasmus student exchange program)

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As Co-Supervisor

Aluminium Recycling - Salt Fluxing and Utilisation of Scrap, Ingrid Melling, Fall 2018

Removal of Aluminium Carbide from Liquid Aluminium, Trygve Storm Aarnæs, Fall 2018

Recovery and Utilisation of Kerf Waste from Silicon Wafering Process, Kevin Lim, Fall 2018

Production of Titanium alloys via aluminothermic reduction, Inger Fygle, Spring 2020

Distribution of Aluminum and Calcium between Silicon and CaO-Al₂O₃-SiO₂ Slags at 1650 °C, Safia Hassan, Spring 2020

Teaching

Metallurgie und Eigenschaften von Aluminiumschmelzen, M. Sc. Course at RWTH Aachen University 2018 - ongoing

Refining and Recycling of Metals, B. Sc, M. Sc, Ph.D. course at Norwegian University of Technology and Science – Full Lecture 2018

Conference Organisation and Chairs

Organizer and editor of REWAS 2019 – Manufacturing the Circular Materials Economy – at TMS (The Minerals, Metals & Materials Society) 2019 in San Antonio Texas

Co-editor of TMS Light Metals 2019

Session Chair in Cast Shop and Recycling at REWAS 2019 in San Antonio

Session Chair in Non-Ferrous Materials at IMMC 2018 in Istanbul

Session Chair in Cast Shop and Recycling Technologies at REWAS 2019 in San Antonio

Session Chair in Cast Shop and Recycling Technologies at TMS 2020 in San Diego

Organizer and co-leader of REWAS 2022 — at TMS 2022 in Anaheim California

Membership in International Committees

Member of Recycling and Environmental Technologies Committee of The Minerals, Metals & Materials Society, USA

Member of Aluminum Committee of The Minerals, Metals & Materials Society, USA