

# Dr.-Ing. Alexander Keller, M.Sc.



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## Professional Background

- Since 04/2021 Scientific Assistant (Post-Doc)  
*Johannes Kepler University (Linz, Austria), Institute of Process Engineering*
- 03/2022 Training as Safety Representative ("Sicherheitsvertrauensperson")  
*WIFI Oberösterreich (Linz, Austria)*
- 02/2018-03/2021 Scientific Assistant (PhD-Student)  
*TU Kaiserslautern (Kaiserslautern, Germany)*
- 08/2005 – 06/2008 Apprenticeship as Chemical Laboratory Assistant  
*Südzucker AG (Obrigheim, Germany)*

## Scientific Background

- 11/2021 Doctor of Engineering (with distinction/ Summa Cum Lauda)  
*TU Kaiserslautern (Kaiserslautern, Germany)*
- 02/2018 Master of Science in Energy and Process Engineering  
*TU Kaiserslautern (Kaiserslautern, Germany)*
- 08/2015 Bachelor of Science in Chemical Process Engineering  
*TU Clausthal (Clausthal-Zellerfeld, Germany)*
- 05/2011 Abitur  
*Staatliches Kolleg Mannheim (Mannheim, Germany)*

## Social Commitment

- 05/2006 – 07/2018 Federal Agency for Technical Relief ("Technisches Hilfswerk")  
*Local Group Frankenthal (Pfalz) (Frankenthal (Pfalz), Germany)*

## Rewards

10/2019	Winner of the Eramet Open Innovation Challenge 2019
05/2011	Award of Verband deutscher Chemiker

## Committees

Since 2023	Working Group: Improvement of Teaching at JKU
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## Review Activities

Separation and Purification Technology, Canadian Journal of Engineering, Chemical Engineering and Science, Chemical Engineering Journal, Industrial & Engineering Chemistry Research, Minerals Engineering, AIChE Journal

## Workshop Organization

10/2024	Technologieforum
06/2024	EFCE Meeting
03/2024	AHS-Teacher Training
08/2019	GVT Course, Separation Processes – Solvent Extraction

## Lectures

Since 2021	Basic Lab Course in Chemical Process Engineering, Lab Course in Advanced Process Engineering <i>Principal Lecturer</i>
Since 2022	Chemical Reaction Engineering Exercises in Chemical Reaction Engineering <i>Principal Lecturer</i>

## Projects

Since 2023	Research on Solvent Extraction in Cooperation with H.C. Starck Principal Investigator
2024	Research on flue ash in cooperation with Bernegger GmbH Project initiation
2014 - 2018	Kolonnen für Reaktivextraktion Populationsbilanzen und Maßstabsvergrößerung (DFG 257964779)

## Publications

A. Keller, M. W. Hlawitschka (2024), Recovery of Excess Sulfuric Acid in the Lithium-ion Batteries Recycling Process, *Sep. Purif. Technol.* 341, 126965, doi: 10.1016/j.seppur.2024.126965

A. Keller, P. L. Sterner, M. W. Hlawitschka, H.-J. Bart (2022), Extraction Kinetics of Cobalt and Manganese with D2EHPA from Lithium-Ion Battery Recyclate, *Chem. Eng. Res. Des.*, 179, 16-26, doi: 10.1016/j.cherd.2022.01.005

A. Keller, M. W. Hlawitschka, H.-J. Bart (2021), Application of Saponified D2EHPA for the Selective Extraction of Manganese from Spent Lithium-Ion Batteries, *Chem. Eng. Process.*, 108552, DOI: 10.1016/j.cep.2021.108552

A. Keller, M. W. Hlawitschka, H.-J. Bart (2021), Manganese Recycling via Solvent Extraction, *Sep. Purif. Technol.*, 119166, DOI: 10.1016/j.seppur.2021.119166

M. W. Hlawitschka, J. Schulz, D. Wirz, J. Schäfer, A. Keller, H.-J. Bart (2020), Digital Extraction Column: Measurement and Modeling Techniques, *Chem. Ing. Tech.*, 92 (7), 914 – 925, DOI: 10.1002/cite.202000043

C. Korb, A. Keller, H.-J. Bart (2018), Reactive Zinc Extraction with D2EHPA in a Kühni Miniplant Column, *Chem. Eng. Tech.*, DOI: 10.1002/ceat.201800239

A. Keller, C. Korb, H.-J. Bart (2018), Gleichgewicht und Stofftransport bei der Reaktivextraktion für technisch relevante Applikationen, *Chem. Ing. Tech.* 90 (9), 1177, DOI: 10.1002/cite.201855100

## Presentations

A. Keller, M. W. Hlawitschka (2024), Solvent Extraction of Sulfuric Acid from Lithium-Ion Battery Leachate, CHISA, 26.08.2024, Prague, Czech Republic

A. Keller, M. W. Hlawitschka (2024), Solvent Extraction of Black Mass Materials, EFCE Meeting, 24.06.2024, Linz, Austria

A. Keller, M. W. Hlawitschka (2024), Closing the Loop: Advancements in Recycling Co, Li, Ni, Mn from Lithium-Ion Batteries, Achema, 13.06.2024, Frankfurt, Germany

A. Keller, M. W. Hlawitschka, H.-J. Bart (2022), Reactive Solvent Extraction of Manganese from Spent Lithium-Ion Batteries, International Solvent Extraction Conference, 26.09.2022, Gothenburg, Sweden

A. Keller (2022), Recycling of lithium-ion batteries: From the equilibrium study to the continuous operation, CHISA, 22.08.2022, Prague, Czech Republic

## Presentations (Continuation)

A. Keller, M. W. Hlawitschka, H.-J. Bart (2022), Recycling von Lithium-Ionen-Akkus: Vom Gleichgewicht zur Extraktionskolonne, Annual Meeting of the ProcessNet Group Extraction, 23.05.2022, Frankfurt, Germany

A. Keller, F. Burdet, M. W. Hlawitschka, H.-J. Bart (2021), Removal of Silicates in Lithium-Extraction Process, Annual Meeting of the ProcessNet Group Raw Materials, 02.03.2021, online

A. Keller, M. W. Hlawitschka, H.-J. Bart (2021), Modellierung der Reaktivextraktion für das Recycling von Lithium Ionen Akkus, Annual Meeting of the ProcessNet Group Extraction, 04.-05.2021, online

A. Keller, H.-J. Bart (2019), Reactive Extraction for Metal Recovery from Spent Lithium-Ion Batteries, EIT Raw Materials: Expert Forum: Urban Mining & Metal Recovery of Low-Grade Ores and Side Streams, 25.11.2019, Helsinki, Finland

A. Keller, M. W. Hlawitschka, H.-J. Bart (2019), Eramet Open Innovation Challenge, 6<sup>th</sup> PROMETIA Scientific Seminar, 21.-23.10.2019, Kristiansand, Norway