

Programme

Annual Meeting of DECHEMA/VDI Group Extraction

February 14-15, 2024

Penck Hotel, Ostra-Allee 33, 01067 Dresden, Germany



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Scientific Committee

Prof. Dr. Andreas Jupke RWTH Aachen University / D
Dipl.-Ing. Karsten Becker Bayer AG, Leverkusen / D

Organization

Prof. Dr. Jan J. Weigand & Dr. Marco Wenzel
Technical University of Dresden / D
Faculty of Chemistry and Food Chemistry
Chair of Inorganic Molecular Chemistry
E-Mail: marco.wenzel@tu-dresden.de

<https://tu-dresden.de/mn/chemie/ac/ac3/die-professur/events/dechema-jahrestreffen-der-processnet-fachgruppen-extraktion>

Wednesday, February 14, 2024

Time	
8:30	Opening
8:40	Solvents <i>Chair: B. Schuur, University of Twente, Enschede / NL</i>
8:40	Extraction of β -carotene and cellular lipids from the oleaginous yeast <i>Rhodospiridium toruloides</i> with green and bio-based solvents <i>V. Buchweitz; D. Peng; M. Minceva; Technical University of Munich, Freising / D</i>
9:05	Terpenoids as solvents: phase equilibria and process evaluation <i>W. Graf von Westarp; J. Hense; A. Jupke; RWTH Aachen University, Aachen / D</i>
9:30	Further improvements in lactic acid membrane extraction based on a thymol-menthol deep eutectic solvent <i>A. Pérez¹; P. Demmelmayer²; M. Kienberger²; W. Riedl¹; ¹University of Applied Sciences and Arts Northwestern Switzerland FHNW, Muttenz / CH; ²Graz University of Technology, Graz / A</i>
9:55	Liquid-liquid chromatography separation of tick-repellent terpenes from supercritical CO ₂ hemp flower extracts <i>S.V. Luca; M. Minceva; Technical University of Munich, Freising / D</i>
10:20	Poster Short Introduction
10:50	Coffee Break & Poster Session
11:20	Reactive Extraction <i>Chair: A. Jupke, RWTH Aachen University / D</i>
11:20	Reactive extraction of boric acid from wastewater <i>J. Brockkötter; K. Becker; Bayer AG, Leverkusen / D</i>
11:45	Process development on the high-yielding reactive extraction of xylose with boronic acids <i>P.J. van der Wal¹; S.R.A. Kersten¹; J.-P. Lange^{1,2}; M.P. Ruiz¹; University of Twente, Enschede / NL; Shell Global Solutions International, Amsterdam / NL</i>
12:10	Mass-transfer and reaction kinetics for reactive extraction <i>M.P. de Foy; E. Uslu; A. Pfennig; University of Liège, Liège / B</i>
12:35	Rare earth extraction by 4-phosphorylpyrazolone <i>J. Zhang; M. Wenzel; K. Schnaars; F. Hennersdorf; J.J. Weigand; Technical University of Dresden, Dresden / D</i>
13:00	Lunch Break & Poster Session
14:00	Award of the Arnold Eucken Medal
15:00	Metal Recycling <i>Chair: J.J. Weigand; Technical University of Dresden / D</i>
15:00	Challenges for solvent extraction in battery recycling <i>F. Diekmann; cylib GmbH, Aachen / D</i>
15:25	Recovery of excess sulfuric acid in the lithium-ion batteries recycling process <i>A. Keller; M.W. Hlawitschka; Johannes Kepler University, Linz / A</i>
15:50	Application of solvent extraction process for zinc recovery from old silver mine "Davidschachthalde" tailings <i>N. Kelly¹; M.H. Aamir¹; T. Helbig¹; A. Werner¹; A.B. Patil^{1,2}; ¹Helmholtz-Zentrum Dresden-Rossendorf, Helmholtz Institute Freiberg for Resource Technology, Freiberg / D; ²University of Jyväskylä, Jyväskylä / FIN</i>
16:15	Selective in situ electrochemical oxidation and solvent extraction for the separation of rare earths in a microreactor <i>J. Wang; Y. Zhou; M. Wenzel; J.J. Weigand; Technical University of Dresden, Dresden / D</i>
16:40	Coffee Break & Poster Session
17:30	Advisory Board Meeting (nominated members only)
18:00	End of Day 1
19:00	Conference Dinner (Restaurant "Zum Schießhaus", Am Schießhaus 19 / self-payment)

Thursday, February 15, 2024

Time	
8:30	Start of Day 2
8:30	Single Droplets & Mixer Settler <i>Chair: K. Becker, Bayer AG, Leverkusen / D</i>
8:30	Acoustic levitation as a tool for mass transfer investigations of immobilised single drops <i>J.-P. Ruiken; J. Villwock; M. Kraume; Technical University of Berlin, Berlin / D</i>
8:55	Experimental plant and dynamic modeling of a liquid-liquid separator on a pilot plant scale <i>S. Zhai; S. Sibirtsev; A. Jupke; RWTH Aachen University, Aachen / D</i>
9:20	Autonomous liquid-liquid extraction operation of mixer-settlers in biologics manufacturing with aid of a digital twin including process analytical technology <i>A. Uhl¹; A. Schmidt¹; M.W. Hlawitschka²; J. Strube¹; ¹Clausthal University of Technology, Clausthal-Zellerfeld / D; ²Johannes Kepler University Linz, Linz / A</i>
09:45	Coffee Break & Poster Session
10:20	Extraction Columns <i>Chair: M.W. Hlawitschka; Johannes Kepler University, Linz / A</i>
10:20	Data-driven surrogate modeling of liquid-liquid extraction columns for the prediction of HETS values <i>L. Polte; P. Orlewski; S. Zhai; A. Jupke; RWTH Aachen University, Aachen / D</i>
10:45	Expanding the graphical concepts of minimum and maximum solvent-to-feed ratios in solvent extraction <i>Z.A. Hamamah; T. Grützner; Ulm University, Ulm / D</i>
11:10	Towards the autonomous liquid-liquid pulsed sieve-tray extraction column <i>A. Palmtag; J. Dohmen; A. Jupke; RWTH Aachen University, Aachen / D</i>
11:35	Development of an analysis tool for investigating the wetting and sedimentation behavior of organic droplets on structured packing material <i>K. Mielke; A. Palmtag; L. Polte; A. Jupke; RWTH Aachen University, Aachen / D</i>
12:00	Lunch Break & Poster Session
13:00	Microscale & Centrifugal Extraction <i>Chair: W. Riedl, FHNW Northwestern Switzerland, Muttenz / CH</i>
13:00	Countercurrent extraction in milli- and micro channels: an ongoing journey adding new perspectives to liquid-liquid extraction <i>B. Schuur; P. Postema; B. Hengeveld; K. Weijers; S. Svavarsson; S. Kienhuis; F. Vermeeren; V. Elhami; T. Brouwer; M.B. Franke; J.A. Wood; University of Twente, Enschede / NL</i>
13:25	Ferrofluidic milli extraction systems for countercurrent slug flow liquid-liquid extraction <i>H. Niawanti; V. Elhami; M.B. Franke; J.A. Wood; B. Schuur; University of Twente, Enschede / NL</i>
13:50	Analysis of separation efficiency in continuous centrifugal extraction <i>S. Volpert; L. Seppelfricke; G. Schembecker; TU Dortmund University, Dortmund / D</i>
14:15	Towards long-term operation in centrifugal partition chromatography <i>F. Buthmann; J. Hohmann; M. Neuwald; G. Schembecker; TU Dortmund University, Dortmund / D</i>
14:40	Closing
14:45	End of Conference

Poster List

P1	Evaluation of cannabidiol (CBD) solubility in common plant oils and hydrophobic eutectic systems <i>A. Alhadid; S.V. Luca; S. Nasrallah; M. Minceva; Technical University of Munich, Freising / D</i>
P2	Raman-assisted assessment of microplastic extraction utilizing natural deep eutectic solvents <i>A. Faller; A. Jupke; RWTH Aachen University, Aachen / D</i>
P3	Selective extraction of primary amines utilizing imine formation <i>J. von Campenhausen; A. Jupke; RWTH Aachen University, Aachen / D</i>
P4	Amine extraction after alkaline hydrolysis of end-of-life textiles <i>F. Roweda; M. Gausmann; A. Jupke; RWTH Aachen University, Aachen / D</i>
P5	Lactic acid purification using an electrified downstream process <i>N. Bangert; C. Schröder; A. Jupke; RWTH Aachen University, Aachen / D</i>
P6	Recycling of lithium-ion batteries: selective leaching of lithium by using water as sustainable leaching agent <i>R. Greil; G. Rudelstorfer; S. Lux; Graz University of Technology, Graz / A</i>
P7	Towards electrochemically assisted pH-shift extraction of metal-ions from lithium-ion batteries: reduction of salt waste <i>L. Budeus; M. Gausmann; A. Jupke; RWTH Aachen University, Aachen / D</i>
P8	Heteroditopic bisurea receptors for the extraction of LiPF_6 <i>K. Schwedtmann; R. Shiyanova; S. Li; M. Wenzel; J.J. Weigand; Technical University of Dresden, Dresden / D</i>
P9	Investigation of the temperature influence on the drag force of single droplets <i>F. Bertram; A. Jupke; RWTH Aachen University, Aachen / D</i>
P10	Modular modelling of liquid-liquid dispersion settling <i>S. Stark; S. Zhai; A. Jupke; RWTH Aachen University, Aachen / D</i>
P11	Design methodology for horizontal, continuous liquid-liquid separators operated with a dispersion band <i>L. Thiel¹; J. Villwock²; M. Kraume²; A. Jupke¹; ¹RWTH Aachen University, Aachen / D; ²Technical University of Berlin, Berlin / D</i>
P12	Model-based design of gradient elution in liquid-liquid chromatography: separation of cannabinoids <i>M. Gerigk; S.V. Luca; S. Schwarzenbach; M. Minceva; Technical University of Munich, Freising / D</i>

Conference Dinner (self-payment)

Wednesday, February 14, 19:00

Restaurant "Zum Schießhaus"

Am Schießhaus 19, 01067 Dresden

<https://www.zum-schiesshaus.de>