

## Supervision and Guidance, Awards and Honores, Networks, Projects by Marcel Weil

### Supervision and Guidance

#### **Selina Weber**

Environmental Assessment of Vanadium Redox Flow Batteries. Master Thesis, in cooperation with the Institute for Industrial Production (IIP) / French-German Institute for Environmental Research, KIT, 11/2017 (Mark 1,0)

#### **Alexandra Peña Cruz**

Life-cycle cost assessment of sodium-ion batteries. Master Thesis, in cooperation with Faculty of Chemical and Process Engineering Chemical and Process Engineering, KIT, 08/2017 (Mark 2,3)

#### **Jacob Fulton**

Techno-Ökonomische Analysen zu Redox-Flow Batterien. Internship (6 Month), in cooperation with the MBA program Product Engineering of the HFU Furtwangen, 03/2017

#### **Anna Petri**

Analyse und Bewertung möglicher Entsorgungswege von Batterien und Akkumulatoren in Entwicklungsländern. Master Thesis, in cooperation with Hochschule Reutlingen, 08/2016 (Mark 1,0)

#### **Matthias Schirle**

Toxikologische Analyse der Inhaltsstoffe von modernen Akkumulatoren. Bachelor Thesis, in cooperation with Hochschule Ulm and Atmosfair, 06/2016 (Mark 1,4)

#### **Saida Kazimova**

Bewertung des Einsatzes von Recycling-Gips bei der Gipskartonplattenproduktion mittels ökobilanzieller Methoden. Master Thesis, in cooperation with Bauhaus-University Weimar, 05/2016 (Mark 2,6)

#### **Yannick Schreiber**

Nanotechnology in the Light of a Circular Economy. Bachelor Thesis, in cooperation with University Freiburg, 05/2016 (Mark 1,7)

#### **Nadine Wendler**

Systemanalytische Untersuchungen von CFK-Kompositmaterialien aus der Automobilindustrie – Fokus Recycling. Bachelor Thesis, in cooperation with Hochschule Pforzheim, 07/2015

#### **Martin Hayek**

Analyse potentieller Einsatzbereiche von LIQHYSMES im deutschen Stromnetz. Bachelor Thesis, in cooperation with ITEP/KIT and TU Ingolstadt, 09/2014 (Mark 1,0)

**Jenny Reiß**

Social Life Cycle Assessment: Die lebenszyklusbasierte Nachhaltigkeitsbewertung einer Lithium-Eisenphosphat-Batterie. Master Thesis, in cooperation University Augsburg, 09/2014 (Mark 1,7)

**Thom Versteeg**

Constructive Technology Assessment of Emerging Technologies: The case of Lithium-Sulphur batteries for Stationary Electricity Storage. Master Thesis, in cooperation with VU Amsterdam (NL), 08/2014 (Mark 1,6)

**Marco Muhl**

Modellierung der zukünftigen Verfügbarkeit von Lithium für neue Technologien unter Berücksichtigung geographischer und geopolitischer Aspekte. Diploma Thesis, in cooperation with TU Berlin, 12/2013

**Andreas Schneider**

Comparative Life Cycle Assessment of different end-of-life scenarios for carbon composites. Master Thesis, in cooperation with Technical University Munich, 12/2013

**Benedikt Zimmermann**

Integration of carbon nanotubes in lithium-ion traction batteries from an environmental perspective. Master Thesis.

Hochschule München, Karlsruher Institut für Technologie (KIT), 07/2012 (Mark: 1,0)

**Hanna Dura**

Comparative LCA of an Electric Light Weight Vehicle in Urban Commuting. Master Thesis.

Universität Köln, Karlsruher Institut für Technologie (KIT), 02/2012 (Mark: 1,3)

**Andre Frankenberg**

Technologische Analyse elektrochemischer Energiespeicher. Diploma Thesis. Karlsruher Institut für Technologie (KIT), Hochschule Karlsruhe, 01 / 2010

**Daan Berends**

A study into the environment impact of Ascem Cement. ERASMUS-Studienarbeit. In Kooperation mit ASCEM B.V. Special Technologies, Niederlande, 12 / 2009

**Oinatz Gallastegi**

Ecological implications of nanoceramic coatings for coal-fired power plants. Diploma Thesis.

Forschungszentrum Karlsruhe (FZK), 02 / 2008

**Sascha Crizeli**

Technologische und ökonomisch-ökologische Optimierung der Herstellung von 2D- und 3D-Netzwerken aus Kohlenstoffnanoröhren. Master-Thesis. Forschungszentrum Karlsruhe (FZK), 10 / 2007

**Corinne Bourrouilh**

Optimisation of Geopolymeric Cements compositions with brown coal fly ash and the evaluation of their ecological impacts. Studienarbeit. Forschungszentrum Karlsruhe (FZK), 12 / 2005

**Markus Will**

Ansätze zur Methodische Ausgestaltung der Wirkungskategorie „Land Use“ in Ökobilanzen. Diplomarbeit (FH). Forschungszentrum Karlsruhe (FZK), 05 / 2004

**Dirk Langhammer**

Modellierung der FRANKA-Technologie zur Aufbereitung von Abbruchbeton für ökobilanzielle Fragestellungen. Diplomarbeit. Forschungszentrum Karlsruhe (FZK), 12 / 2002

**Chido Okwuosa**

Material Flow in the German Sand and Gravel Industry and Inventory Analysis of Sand and Gravel Extraction. Dissertation towards the degree of Master of Science in Industrial Rocks and Minerals. Forschungszentrum Karlsruhe (FZK), 09 / 2002

**Awards and Honores**

GESELLSCHAFT DEUTSCHER CHEMIKER



Highest Conference Award: Congress of Gesellschaft Deutscher Chemiker (GDCh) section building chemistry in Karlsruhe, October 5-6, 2006

„Sustainable Design of Geopolymer-Evaluation of Primary and Secondary Raw Materials in the Early Phases of Material Development“



AIST-Fellowship (June – July 2007)

Research topic: Assessment of resources availability for the production of geopolymers National Institute of Advanced Industrial Science and Technology – AIST – Centre for Life Cycle Assessment, Tsukuba, Japan



Participator of the 55th interdisciplinary Nobel Laureates Meeting Lindau, Germany 2005. Supported by the VW-Foundation.

**Network**

- Initiator des KIT internen SANEES Netzwerkes für Energiespeicher, intelligente Energienetze und Systemanalyse
- NanoImpactNet  
Member of the European Network on the Health and Environment Impact of Nanomaterials  
<http://www.nanoimpactnet.eu/>

## Projects

- 2011 - **AUTOSUPERCAP**  
2014 Development of high power density supercapacitors for automotive applications –  
Project fund: 281.000 Euro (total: 3.900.000 Euro)  
Sponsor: EU, FP 7
- 2008 - **HARCANA**  
2011 High Aspect Ratio Carbon-based Nanocomposites – HARCANA –  
Contract with FutureCarbon <http://www.future-carbon.de/>  
Sponsor: EU
- 2004 - **GEOPOLYMER**  
2007 Interdisciplinary research project: Development of Geopolymers supported System Analysis. In cooperation with Technical University of Freiberg (Germany), Institute For Ceramics, Glass and Construction Material Technology, as well as University of Weimar (Germany), Chair of Building Chemistry.  
Project platform: <http://www.uni-weimar.de/projekte/geton/>  
Project fund: 577.000 Euro  
Sponsor: Volkswagen-Foundation
- 2005 - **Performance AASM**  
2006 Interdisciplinary research project (Finland – Germany): Early age investigations on length change performance and structure formation of alkali-activated slags for mortars / new building materials.  
Project partner: VTT Building and Transport – Materials and Products (Finland), University of Freiberg, Institute for Ceramics, Glass and Construction Materials Technology, University of Weimar, Chair of Building Chemistry.  
Sponsor: Academy of Finland, DAAD

## Selected Publications

### **Weil, M. et al.:**

Life cycle analysis of geopolymers. In: Provis, J. and Deventer J. (Eds.): Geopolymers: structure, processing, properties and industrial applications. Woodhead Publishing Ltd, Cambridge, in press

### **Weil, M., Crizeli S., Forero, S.:**

Optimisation of Carbon Nanotube Paper Production – A Life Cycle oriented approach. International Conference on Safe Production and Use of Nanomaterials – NanoSafe –, Grenoble , 11/2008

### **Weil, M., Meyer, F., Levi, A., Gallastegi, O., Stripf, M.:**

Managing Emerging Innovations – CO2 savings due to application of nano ceramic coating in coal fired power plants. NanoSmat, Barcelona, 10/2008

### **Weil, M. et al.:**

Streamlined LCA and Economic Assessment for Upscale of Carbon Nanotube Paper Production. 3rd International Conference on the Environmental Effects of Nanoparticles and Nanomaterials. University of Birmingham, 08/2008

**Weil, M. et al.:**

Integrated Economic and Environmental (Life Cycle) Optimisation of Carbon Nanotube Paper Production. Nanofair, Dresden, 02/2008. VDI-Berichte 2027, pp 117-122

**Gallastegi, O.:**

Ecological implications of nanoceramic coatings for coal-fired power plants. Diploma Thesis 02/2008, FZK

**Bauer, C., Buchgeister, J., Hischier R., Poganietz W.R., Schebek, L., Warsen, J.:**

Towards a framework for life cycle thinking in the assessment of nanotechnology. Journal of Cleaner Production, Volume 16, Issues 8-9, 2008, pp 910-926

**Weil, M., Buchwald, A., Dombrowski, K., Jeske, U., Buchgeister, J. (Eds.):**

Materials Design and Systems Analysis. Shaker Verlag: Aachen, 2007; p 306, ISBN: 978-3-8322-6311-9

**Dombrowski, K., Buchwald, A., Weil, M.:**

The influence of calcium content on the structure and thermal performance of fly ash based geopolymers. Journal of Materials Science 2007, 42, (9), 3033-3043.

**Weil, M., Jeske, U., Buchwald, A., Dombrowski, K.:**

Sustainable Design of Geopolymers - Evaluation of Raw Materials by the Integration of Economic and Environmental Aspects in the Early Phases of Material Development. In: Proceedings of the 14th CIRP Int. Conference on Life Cycle Engineering, Tokyo, 2007; Springer Verlag: pp 278-284, ISBN: 978-1-84628-934-7

**Weil, M. et al.:**

Economic and Life Cycle Assessment in the Design Phase of Carbon Nanotube Paper Production. Chemical Nanotechnology Talks VIII - Energising a Sustainable Future, Frankfurt, 11/2007

**Weil, M., Buchwald, A., Dombrowski, K., Poganietz, W.R.:**

Managing emerging technologies – Sustainable design for geopolymers. 17th Conference of the Society of Environmental Toxicology and Chemistry (SETAC) Europe: Multiple stressors for the environment - present and future challenges and perspectives. Porto, 05/2007

**Weil, M., Jeske, U., Schebek, L.:**

Closed-loop Recycling of Construction and Demolition Waste in Germany in View of Stricter Environmental Threshold Values. Waste Management & Research, 24/3, 197-206, 06/2006

**Weil, M., Buchwald, A., Dombrowski, K.:**

Sustainable Design of Geopolymers - Integration of Economic and Environmental Aspects in the Early Stages of Material Development., In: Proceedings of the Gesellschaft Deutscher Chemiker (GDCh)-Fachtagung Bauchemie, Karlsruhe, 2006; pp 297-306, ISBN: 3-936028-42-7

**Weil, M.:**

Ressourcenschonung und Umweltentlastung bei der Betonherstellung durch Nutzung von Bau- und Abbruchabfällen. Dissertation. Technische Universität Darmstadt. Institut für Wasserversorgung und Grundwasserschutz, Abwassertechnik, Abfalltechnik, Industrielle Stoffkreisläufe, Umwelt- und Raumplanung – WAR–. Schriftenreihe WAR 160, Darmstadt 12/2004. ISBN: 3 932518 56 X

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