CIRP 2017 Program

P1: Plenary Lecture 1

March 8 (Wed) Room A • B • C 9:00-9:30

P1 An Integrated Framework for Life Cycle Engineering
Michael Z. Hauschild, Christoph Herrmann, Sami Kara

P2: Plenary Lecture 2

March 8 (Wed) Room A • B • C 9:30-10:00

P2 The EU Circular Economy Package – Life Cycle Thinking to Life Cycle Law?
Richard Hughes

A11: Design for Life Cycle (1)

March 8 (Wed) Room A 10:30-12:30

A11-1 Assessment of End-of-Life Strategies for Automation Technology Components
Mercedes Barkmeyer, Alexander Kaluza, Nico Pastewski, Sebastian Thiede, Christoph Herrmann

A11-2 Toolbox for Increasing Resource Efficiency in the European Metal Mechanic Sector
Stefan Blume, Denis Kurle, Christoph Herrmann, Sebastian Thiede

A11-3 Mapping and Integrating Value Creation Factors with Life-Cycle Stages for Sustainable Manufacturing
P. Bilge, S. Emec, G. Seliger, I.S. Jawahir

A11-4 Product Life Cycle Planning for Sustainable Manufacturing: Translating Theory into Business Opportunities
W. Haanstra, M.E. Toxopeus, M.R. van Gerrevink

A11-5 A Case Study on Industrial Collaboration to Close Material Loops for a Domestic Boiler
M.E. Toxopeus, W. Haanstra, M.R. van Gerrevink, R. van der Meide

A11-6 Parallel Design of a Product and Internet of Things (IoT) Architecture to Minimize the Cost of Utilizing Big Data (BD) for Sustainable Value Creation
Ryan Bradley, I.S. Jawahir, Niko Murrell, Julie Whitney

A12: Life Cycle Simulation & Management

March 8 (Wed) Room A 13:30-15:30

A12-1 Complexity in a Life Cycle Perspective
Christoph J. Velte, Anja Wilfahrt, Robert Müller, Rolf Steinhilper

A12-2 A Functional Approach to Life Cycle Simulation for System of Systems
Kazune Kawakami, Shinichi Fukushige, Hideki Kobayashi

A12-3 Life Cycle Simulation of Mechanical Parts with Part Agents Considering User Behavior
Yumihito Yokoki, Hiroyuki Hiraoka

A12-4 Procedure Model for Efficient Simulation Studies which Consider the Flows of Materials and Energy Simultaneously
Johannes Stoldt, Matthias Putz

A12-5 System Lifecycle Management - An Approach for Developing Cybertronic Systems in Consideration of Sustainability Aspects
Martin Eigner, Thomas Dickopf, Hristo Apostolov

A12-6 Life Cycle Engineering and Management – Fostering the Management-Orientation of Life Cycle Engineering Activities

A13: Design for Life Cycle (2)

March 8 (Wed) Room A 16:00-18:20

A13-1 Design for Changeability: Incorporating Change Propagation Analysis in Modular Product Platform Design
Guenther Schuh, Michael Riesener, Stefan Breunig

A13-2 Using Design Requirements for Environmental Assessment of Products: A Historical Based Method
Darian Visotsky, Apurva Patel, Joshua Summers

A13-3 Sustainable Life Cycle Design Using Constraint Satisfaction Problems and Quality Function Deployment
Alexandre Popoff, Dominique Millet

A13-4 Product Redesign for Improved Value Recovery via Disassembly Bottleneck Identification and Removal
Liang Cong, Fu Zhao, John W. Sutherland
| A13-5 | Ecodesign and Energy Labelling: The Role of Virtual Prototyping  
**Daniele Landi**, Andrea Capitanelli, Michele Germani |
| A13-6 | In Pursuit of Personalization Design  
**Kazuki Kaneko**, Yusuke Kishita, Yasushi Umeda |
| A13-7 | Evaluation of Design Alternatives of Sensor Embedded End-of-Life Products in Multiple Periods  
**Aditi D. Joshi**, Surendra M. Gupta, **Aya Ishigaki** |

### B11: Remanufacturing (1)

| B11-1 | A Collaborative End of Life Platform to Favour the Reuse of Electronic Components  
**Marco Marconi**, **Claudio Favi**, Michele Germani, Marco Mandolini, Marco Mengarelli |
| B11-2 | Uncertainty Analysis of Global Reuse Monitoring  
**Kohei Endo**, Massaki Fuse |
| B11-3 | Combined Two-Dimensional Non-Renewable Warranty Policy Analysis for Remanufactured Products  
**Ammar Y. Alqahtani**, Surendra M. Gupta, **Tetsuo Yamada** |
| B11-4 | Pricing Decision Models for Remanufactured Short-Life Cycle Technology Products with Generation Consideration  
**Liangchuan Zhou**, Surendra M. Gupta, **Yuki Kinoshita**, Tetsuo Yamada |
| B11-5 | New Opportunities and Incentives for Remanufacturing by 2020’s Car Service Trends  
**Rolf Steinhipler**, Alexander Nagel |
| B11-6 | A Comparison of Best Practices of Public and Private Support Incentives for the Remanufacturing Industry  
**T. Guidat**, J. Seidel, H. Kohl, G. Seliger |

### B12: Remanufacturing (2)

| B12-1 | Quantifying the Cannibalization Effect of Hybrid Manufacturing/Remanufacturing System in Closed-Loop Supply Chain  
**Takumi Nanasawa**, **Yasutaka Kainuma** |
| B12-2 | Optimization of Reconditioning Scheme for Remanufacturing of Used Parts Based on Failure Features  
**Yanhong Wang**, **Zhihang Jiang**, Jing Wang, Yanan Wang, I.S. Jawahir |
| B12-3 | A Design Method of Predecisional Remanufacturing Based on Structural Similarity  
**Qimdi Ke**, Yan Lv, Shouxi Song |
| B12-4 | Decision Making System for Designing Products and Production Systems for Remanufacturing Activities  
**Hanna Nurul Ismail**, **Peggy Zwolinski**, Guillaume Mandil, Daniel Brisaud |
| B12-5 | Optimal Disassembly Scheduling with a Genetic Algorithm  
**Hideyuki Nonomiva**, Yoshitaka Tanimizu |
| B12-6 | The Advantages of Remanufacturing from the Perspective of Eco-Efficiency Analysis: A Case Study  
**Feri Afrinaldi**, Zhichao Liu, Taufik, Hong-Chao Zhang, Alizar Hasan |

### B13: Planning & Evaluation of Sustainable Production Systems

| B13-1 | Production Flow Analysis through Environmental Value Stream Mapping: A Case Study of Cover Glass Manufacturing Facility  
**Yuchu Huang**, Masayoshi Tomizuka |
| B13-2 | Using Graph-Based Visualizations to Explore Key Performance Indicator Relationships for Manufacturing Production Systems  
| B13-3 | Sustainability Performance Indicators at Shop Floor Level in Large Manufacturing Companies  
**Mats Zackrisson**, Martin Kurdve, Sasha Shahbazi, Magnus Wiktorsson, Mats Winroth, Anna Landström, Peter Almström, Carin Andersson, Christina Windmark, Anna Ericson Öberg, Andreas Myrelid |
| B13-4 | Adoption of Integrated Lean-Green-Agile Strategies for Modern Manufacturing Systems  
**Varinder Kumar Mittal**, **Rahul Sindhwani**, Vivek Kalsariya, Faizan Salroo, Kul dip Singh Sangwan, Punj Lata Singh |
| B13-5 | Agile Factory Planning – An Approach to Improve Competitiveness of Existing Factories  
**Uwe Dombrowski**, **Stefan Ernst** |
| B13-6 | Utilizing Gaming Technology for Simulation of Urban Production  
**Max Juraschek**, Christoph Herrmann, Sebastian Thiede |
| B13-7 | A Generic Sankey Tool for Evaluating Energy Value Stream in Manufacturing Systems  
**Wen Li**, Sebastian Thiede, Sami Kara, Christoph Herrmann |
C11: CPS for Manufacturing

March 8 (Wed)  Room C  10:30-12:30

C11-1 The Digital Twin: Realizing the Cyber-Physical Production System for Industry 4.0
Thomas H.-J. Uhlemann, Christian Lehmann, Rolf Steinhilper

C11-2 Methodology for Monitoring Manufacturing Environment by Using Wireless Sensor Networks (WSN) and the Internet of Things (IoT)
Wen Li, Sami Kara

C11-3 Web-Based Component Data for the Commissioning of Machine Tools
Benedikt Klee, Joerg Bauer, Hanqiu Jiang, Juergen Fleischer

C11-4 A Software Tool for the Analysis and Management of Resource Consumptions and Environmental Impacts of Manufacturing Plants
Claudio Favi, Michele Germani, Marco Mandolini, Marco Marconi

C11-5 Operation Mode Study in Cloud Manufacturing Ecosystem
Shengkai Chen, Shuilang Fang, Tao Peng, Renzhong Tang

C11-6 Industrial Symbiosis: Exploring Big-Data Approach for Waste Stream Discovery
Bin Song, Zhiqian Ye, Paul Kohls, Christoph Herrmann

C12: Sustainable Production Processes (1)

March 8 (Wed)  Room C  13:30-15:30

C12-1 Energy and Cost Estimation of a Feature-Based Machining Operation on HRSA
A. E. Bonilla Hernández, Tomas Beno, Claes Fredriksson

C12-2 Parameter Optimization Model of Milling Machine Processing for High Efficiency and Low Carbon
Xing-Shuo Xu, Fang-Yi Li, Li-Rong Zhou, Lin Kong

C12-3 Optimization of Machining Parameters for Improving Energy Efficiency Using Integrated Response Surface Methodology and Genetic Algorithm Approach
Kuldip Singh Sangwan, Girish Kant

C12-4 Energy-Efficient Cutting Parameters Determination for NC Machining with Specified Machining Accuracy
Dawei Liu, Wei Wang, Lihui Wang

C12-5 Multi-Objective Tool Sequence Optimization in 2.5D Pocket CNC Milling for Minimizing Energy Consumption and Machining Cost
Lei Wu, Congbo Li, Ying Tang, Qian Yi

C12-6 Embodied Energy in Dry Cutting under Consumption of Tool and Materials

C13: Sustainable Production Processes (2)

March 8 (Wed)  Room C  16:00-18:20

C13-1 Functional and Environmental Evaluation of Alternative Disinfection Methods for Cutting Fluids
Nadine Madanchi, Sebastian Thiede, Christoph Herrmann

C13-2 Energy Efficient Cutting Fluid Supply: The Impact of Nozzle Design
Nadine Madanchi, Marius Winter, Sebastian Thiede, Christoph Herrmann

C13-3 Quantifying the Uncertainty Associated with the Material Properties of a Natural Fiber
Sweety Shahinur, AMM Sharif Ullah

C13-4 An Improved Energy Matching Method to Utilize the Potential Energy of Large-Sized Hydraulic Press at Multi-System Level
Lei Li, Haihong Huang, Xinyu Li, Zhiheng Liu

C13-5 Substitution of Coolant by Using a Closed Internally Cooled Milling Tool
E. Uhlmann, H. Riemer, D. Schröter, F. Sammler, S. Richarz

C13-6 Qualification of Aqueous Part Cleaning Machines for the Use of Waste Heat in Industrial Production Companies
Felix Junge, Eberhard Abele, Florian Vogel

C13-7 Highly Iterative Product Development within the Tool and Die Making Industry
Günther Schuh, Michael Salmen, Thomas Kuhlmann, Jan Wiese
A21: Local Oriented Manufacturing

March 9 (Thu) Room A 8:40-10:00

A21-1 Supporting Design for Local Oriented Manufacturing in Developing Countries
   Tomoyuki Tamura, Yasushi Umeda, Yusuke Kishita

A21-2 A Visualization System of Design Information for Locally-Oriented Sustainable Product
   Yuya Sugita, Shinichi Fukusige, Hideki Kobayashi

A21-3 Lessons Learnt from Designing PSS for Base of Pyramid
   Ana Marzal López, Frazer Musonda, Tomohiko Sakao, Noara Kebir

A21-4 Developing Sustainable Innovative Products for the Bottom of the Pyramid by Biomimetic Design Concepts
   Jahau Lewis Chen, Chang-Lin Lee

A22: Environmental Performance Evaluation

March 9 (Thu) Room A 10:50-12:30

A22-1 Indicators for Environmental Sustainability
   Yan Dong, Michael Z Hauschild

A22-2 Monitoring Environmental Performance during the Design Process of a Complex System
   N. Tchertchian, D. Millet

A22-3 A User Oriented Framework to Support Environmental Performance Indicators Selection
   C. Heslouin, V. Perrot-Bernardet, A. Corrier, N. Perry

A22-4 Integrating Environmental Impacts with SysML in MBSE Methods
   Sébastien Bougaina, Detlef Gerharda

A22-5 A Feature-Based CAD-LCA Software Integration Approach for Eco-Design
   Zhaorui Chen, Jin Tao, Suiran Yu

B21: PSS and Business Models

March 9 (Thu) Room B 8:40-10:20

B21-1 A Mapping Network Model Integrating Service to Warrant Function Availability of Complex Electro-Mechanical Products
   Fengtian Chang, Guanghui Zhou, Qi Lu

B21-2 Evaluation of Variety-Induced Costs in Product-Service Systems (PSS)
   Guenther Schuh, Michael Riesener, Stefan Breunig, Jan Koch, Jan Kuntz

B21-3 Towards a Sustainable Business Model for Plastic Shopping Bag Management in Sweden
   Jagdeep Singh, Tim Cooper

B21-4 Closing the Loop for Packaging: Finding a Framework to Operationalize Circular Economy Strategies
   Monia Niero, Michael Z. Hauschild

B21-5 Composites in a Circular Economy: A Study of United Kingdom and South Africa
   Paul T Mativenga, Al Amin Mohamed Sultan, John Agwa-Ejon, Charles Mbohwa

B22: Maintenance

March 9 (Thu) Room B 10:50-12:30

B22-1 Continuous Improvement of Criteria for Condition-Based Maintenance by Means of Effects Evaluation of Treatments
   Akihiro Morimoto, Yusuke Sato, Shozo Takata

B22-2 AR-Guided Product Disassembly for Maintenance and Remanufacturing
   M. M. L. Chang, S. K. Ong, A. Y. C. Nee

B22-3 Immersive Augmented Reality Environment for the Teleoperation of Maintenance Robots
   A.W.W. Yew, S.K. Ong, A.Y.C. Nee

B22-4 Life Cycle Management of Cutting Tools: Comprehensive Acquisition and Aggregation of Tool Life Data
   Dominik Brenner, Fabian Kleinert, Joachim Imlia, Engelbert Westkämper

B22-5 A Data Driven Model for Predicting Tool Health Condition in High Speed Milling of Titanium Plates Using Real-Time SCADA
   Jinsong Bao, Yuan Guangchao, Xiaohu Zheng, Jianguo Zhang, Xia Ji, Jie Zhang
C21: Energy Efficient Production (1)  

March 9 (Thu)  
Room C 8:40-10:20

C21-1  
Xu Gong, Marlies Van der Wee, Toon De Pessemier, Sofie Verbrugge, Didier Colle, Luc Martens, Wout Joseph

C21-2  
Shop-Floor Life Cycle Assessment  
Felipe Cerdas, Sebastian Thiede, Max Juraschek, Artem Turetskyy, Christoph Herrmann

C21-3  
Decision Support for Energy-Saving Idle Production Facility Operations in a Production Line Based on an M2M Environment  
Hironori Hibino, Kentaro Yanaga

C21-4  
The Automated Evaluation of the Energy Efficiency for Machining Applications Based on the Least Energy Demand  
S. Kreitlein, M. Scholz, J. Franke

C21-5  
Business Model for Energy Efficiency in Manufacturing  
Gökan May, Dimitris Kiritsis

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C22: Energy Efficient Production (2)  

March 9 (Thu)  
Room C 10:50-12:30

C22-1  
Integration and Interaction of Energy Flexible Manufacturing Systems within a Smart Grid  
Fabian Keller, Cedric Schultz, Peter Simon, Stefan Braunreuther, Johannes Glassröder, Gunther Reinhart

C22-2  
Agnes Pechmann, Maximilian Zarte

C22-3  
Decentral Energy Control in a Flexible Production to Balance Energy Supply and Demand  
Sebastian Weckmann, Timm Kuhlmann, Alexander Sauer

C22-4  
Augmenting Energy Flexibility in the Factory Environment  
Max Weeber, Christian Lehmann, Johannes Böhner, Rolf Steinhilper

C22-5  
Increasing Energy Efficiency in Production Environments through an Optimized, Hybrid Simulation-Based Planning of Production and Its Periphery  
Thomas Sobottka, Felix Kamhuber, Wilfried Sihn

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D22: Industrial Session (Organized Session)  

March 9 (Thu)  
Room D 10:50-12:10

D22-1  
Fatigue Crack Detection System Based on IoT and Statistical Analysis  
Shigeru Yasuda, Shinya Miyazaki

D22-2  
Innovative Changes for Track Maintenance by Using ICT  
Yasutaka Saito, Shigeru Motoyoshi, Toshiyuki Konishi, Kazushi Matsuura, Atsushi Yokoyama

D22-3  
Development of Sensing Interface for Preventive Maintenance of Machine Tools  
Makoto Fujishima, Masahiko Mori, Kimiyuki Nishimura, Masakazu Takayama, Yasutaka Kato

D22-4  
Remanufacturing of Automotive Parts in Japanese Market  
Akira Ikeda
P3: Plenary Lecture 3

March 10 (Fri) Room A · B · C 11:00-11:30

P3 Revolutionizing Technology Adoption for the Remanufacturing Industry
N.C.Y. Yeo, H. Pepin, S.S. Yang

P4: Plenary Lecture 4

March 10 (Fri) Room A · B · C 11:30-12:00

P4 Development of 1/N Machines for Optimization of Life Cycle Cost Responding to Globally Varying Production Environment
Yasuhiko Yamazaki

P5: Plenary Lecture 5

March 10 (Fri) Room A · B · C 12:00-12:30

P5 IoT Utilization in KOMATSU
Hisashi Asada

A31: Monitoring of Production Systems

March 10 (Fri) Room A 8:40-10:40

A31-1 NILM Disaggregation Algorithm for Variable Speed Drives
Christian Gebbe, Florian Göttl, Johannes Glasschöder, Gunther Reinhart

A31-2 A Common Software Framework for Energy Data Based Monitoring and Controlling for Machine Power Peak Reduction and Workpiece Quality Improvements
Christoph J. H. Bauerdiick, Mark Helfert, Benjamin Menz, Eberhard Abele

A31-3 Energy Efficiency in Machine Tool Operation by Online Energy Monitoring Capturing and Analysis
Juergen Lenz, Jan Kotschenreuther, Engelbert Westkaemper

A31-4 Energy Condition Perception and Big Data Analysis for Industrial Cloud Robotics
Wei Xu, Quan Liu, Wenjun Xu, Zude Zhou, Duc Truong Pham, Ping Lou, Qingsong Ai, Xiaomei Zhang

A31-5 Internet-of-Things Enabled Real-Time Monitoring of Energy Efficiency on Manufacturing Shop Floors
Yee Shee Tan, Yen Ting Ng, Jonathan Sze, Choong Low

A31-6 Internet of Things for Real-Time Waste Monitoring and Benchmarking: Waste Reduction in Manufacturing Shop Floor
Yen Ting Ng, Yee Shee Tan, Jonathan Sze Choong Low

A32: Sustainable Consumption and Production (Organized Session)

March 10 (Fri) Room A 13:30-15:30

A32-1 Demand Estimation of Consumer Durables in Southeast Asia in 2030: A Business-As-Usual Scenario
Chuang Bao, Yusuke Kishita, Yasushi Umeda

A32-2 Remanufacturing and Trade Regulation
Mikihazu Kojima

A32-3 Remanufacturing and Refurbishing in Developed and Developing Countries in Asia – A Case Study in Photocopiers
Koshi Kaminagak, Mitsutaka Matsumoto, Yun Arifatul Fatimah

Duc-Quang Nguyen, Vinh-Hung Ha, Yamase Eiji, Trung-Hai Huynh

A32-5 Comparative Analysis of Average Time of Use of Home Appliances
Jordi Cravioto, Reiaka Yasunaga, Eiji Yamase

A32-6 The Scientific Challenges for a Sustainable Consumption and Production Scenario: The Circular Reuse of Materials for the Upgrading and Repurposing of Components
Daniel Brissaud, Peggy Zwolinski

A33: Lifetime (Organized Session)

March 10 (Fri) Room A 16:00-17:40

A33-1 Uncertainty in Lifespan Estimation and Its Potential Impacts on Our Social System
Shinsuke Murakami, Haruhsia Yamamoto, Masahiro Oguchi
A33-2 Lifetime Distribution of Buildings Decided by Economic Situation at Demolition: D-Based Lifetime Distribution
Ichiro Daigo, Kohei Iwata, Masahiro Oguchi, Yoshikazu Goto

A33-3 Lifetime Analysis for Electronic Devices in Vietnam
Eiji Yamasue, Jordi Cravioto, Duc Quang Nguyen, Masahiro Oguchi, Ichiro Daigo

A33-4 Towards a Circular Economy: Exploring Routes to Reuse for Discarded Electrical and Electronic Equipment.
Christine Cole, Alex Gnanapragasam, Tim Cooper

A33-5 Effect of a Reusable Unit’s Physical Life Distribution on Reuse Efficiency in Environmentally Conscious Products
Susumu Okumura, Yuya Sakaguchi, Yuji Hatanaka, Kazunori Ogohara

**B31: Recycling**

March 10 (Fri) Room B 9:00-10:40

B31-1 Collaboration Platform for Enabling Industrial Symbiosis: Application of the By-Product Exchange Network Model
Benjamin Raabe, Jonathan Sze Choong Low, Max Jurasek, Christoph Herrmann, Tobias Bestari Tjandra, Yen Ting Ng, Denis Kurle, Felipe Cerdas, Jannis Lueckenga, Zhiquan Yeo, Yee Shee Tan

B31-2 Comparative Study of End-of-Life Vehicle Recycling in Australia and Belgium
Vi Kie Soo, Jef Peeters, Paul Compston, Matthew Doolan, Joost R. Duflou

B31-3 Development of Resource Efficiency Index for Electrical and Electronic Equipment
Juntao Wang, Nozomu Mishima

B31-4 A Process Demonstration Platform for Product Disassembly Skills Transfer
Supachai Vongbunyong, Pakorn Vongsela, Jirad Sreerattana-aporn

B31-5 Improving Mechanical Properties of Recycled Polypropylene-Based Composites Using Taguchi and ANOVA Techniques
Yitao Zheng, Fu Gu, Yanru Ren, Philip Hall, Nicholas J Miles

**B32: Remanufacturing (3)**

March 10 (Fri) Room B 13:30-15:30

B32-1 A Direct Material Reuse Approach Based on Additive and Subtractive Manufacturing Technologies for Manufacture of Parts from Existing Components
Van Thao Le, Henri Paris, Guillaume Mandil, Daniel Brissaud

B32-2 A Review on In-situ Monitoring and Adaptive Control Technology for Laser Cladding Remanufacturing
Wei-Wei Liu, Zi-Jue Tang, Xu-Yang Liu, Hai-Jiang Wang, Hong-Chao Zhang

B32-3 Environmental Load Reduction by Customization for Reuse with Additive Manufacturing
Toshiyuki Tateno, Shinsuke Kondoh

B32-4 Interlinking Multiple Decision Variables over Different Life Cycle Stages to Realize Effective Reuse and Recycling from a Strategic Viewpoint
Shinsuke Kondoh, Hitoshi Komoto, Keijiro Masui

B32-5 Development of a Performance Measurement System for International Reverse Supply Chains
Steffen Butzer, Sebastian Schütz, Matthias Peterschke, Rolf Steinhalper

B32-6 Key Activities, Decision Variables and Performance Indicators of Reverse Logistics
Kuldip Singh Sangwan

**B33: Additive Manufacturing**

March 10 (Fri) Room B 16:00-17:40

B33-1 Environmental Impact of Additive Manufacturing Processes: Does Am Contribute to a More Sustainable Way of Part Manufacturing?
Karel Kellens, Raya Mertens, Dimos Paraskevas, Wim Dewulf, Joost R. Duflou

B33-2 Dynamical Fatigue Behavior of Additive Manufactured Products for a Fundamental Life Cycle Approach
Eckart Uhmann, Claudia Fleck, Georg Gerlitzky, Fabian Faltin

B33-3 Sustainable Value Roadmapping Framework for Additive Manufacturing
Melanie Despeisse, Miying Yang, Steve Evans, Simon Ford, Tim Minshall

B33-4 Energy Analysis of Bioplastics Processing
Christine Schulze, Max Jurasek, Christoph Herrmann, Sebastian Thiede

B33-5 The Influence of Scanning Pattern on the Part Properties in Powder Bed Fusion Processes: An Experimental Study
Hong Zhang, Tao Peng, Shuangmei Xu
C31: LCA (1)

March 10 (Fri)  Room C  9:00-10:40

C31-1  International Survey of the Costs of Assessment for Environmental Product Declarations
       Tomohiro Tasaki, Koichi Shobatake, Kenichi Nakajima, Carl Dalhammar

C31-2  Life Cycle Analysis of HDPE Pipe Manufacturing – A Case Study from an Indian Industry
       Kulip Singh Sangwan, Vikrant Bhakar

C31-3  Concept of Integrated Life Cycle Assessment and Costing – Application to the Case of Designing a Hybrid Train
       Lilly Meynerts, Uwe Götze, Sören Claus, Paulo Peças, Inês Ribeiro

C31-4  Investigation on the Comparative Life Cycle Assessment between Newly Manufacturing and Remanufacturing Turbochargers
       Wang Gao, Tao Li, Zijue Tang, Shitong Peng, Hong-chao Zhang

C31-5  Improved Visualization in LCA through the Application of Cluster Heat Maps
       Felipe Cerdas, Alexander Kaluza, Selin Erkisi-Arici, Stefan Böhme, Christoph Herrmann

C32: LCA (2)

March 10 (Fri)  Room C  13:30-15:10

C32-1  Comparative LCA of Flocculation for the Harvesting of Microalgae for Biofuels Production
       Massimo Collotta, Pascale Champagne, Warren Mabee, Giuseppe Tomasoni, Gustavo B. Leite, Leonardo Busi, Marco Alberti

C32-2  Waste Water Treatment Plant Life Cycle Assessment: Treatment Process to Reuse of Water
       Smita Raghuvanshi, Vikrant Bhakar, Chelikani Sowmya, K.S. Sangwan

C32-3  Life Cycle Cost Analysis of Electrical Vehicles in Australia
       Sami Kara, Wen Li, Nikkita Sadjiva

C32-4  Analysis of Material Based GHG Emissions and Costs for Assembly Products Using Asian Lifecycle Inventory Databases:
       Cell Phone Case Study
       Rena Kondo, Yuki Kinoshita, Tetsuo Yamada, Norihiro Iitsu, Masato Inoue

C32-5  A Panoramic Analysis of Hydrogen Utilization Systems: Using an Input-Output Table for Next Generation Energy Systems
       Satoshi Nakano, Ayu Washizu

C33: Production Planning and Control

March 10 (Fri)  Room C  16:00-17:40

C33-1  Simulation-Based Assessment of Segmentation and Control Strategies within Multi-Variant Productions
       Steffen Butzer, Sebastian Schötz, Andreas Kruse, Anna-Sophie Freytag, Rolf Steinhilper

C33-2  Benefit Oriented Production Data Acquisition for the Production Planning and Control
       Christina Reuter, Felix Brambring, Thomas Hempel, Phil Kopp

C33-3  Cycle-Oriented Evaluation of Production Technologies: Extending the Model of the Production Cycle
       Christian Dengler, Alexander Schönmann, Boris Lohmann, Gunther Reinhart

C33-4  Generation of Planned Orders and Their Matching with Customer Orders in Multi-Variant Series Production
       Jens Buergin, Julian Beisecker, Sebastian Fischer, Bettina Geier, Hansjoerg Tutsch, Stefan Mercamp, Gisela Lanza

C33-5  Ensuring Time-Saving and Effective Production Planning by Prioritizing Activities Based on Company-Specific Validation Success Rates
       Tobias Steinhaeusser, Gunther Reinhart