

POSTER TIMETABLE

Day 1 – Wednesday 2nd July (Main hall)

Poster number	Poster topic	Presenters	Group
1	INFLUENCE OF PROCESS PARAMETERS ON NANOPARTICLE MIXING IN OPPOSED JET FLUIDIZED BED	Raul F. Nascimento , Jialin Men, Björn Düsenberg, Jochen Schmidt & Andreas Bück	Institute of Particle Technology, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany
2	POPULATION BALANCE MODELING OF FLUIDIZED BED SPRAY AGGLOMERATION BASED ON DESIGN OF EXPERIMENT (DOE) APPROACH	Jhoan S. Giraldo Yepes ¹ , Sören Lehmann ² , Swantje Pietsch-Braune ¹ & Stefan Heinrich ¹	1 Hamburg University of Technology, Institute of Solids Process Engineering and Particle Technology, Germany 2 Glatt Pharmaceutical Services GmbH & Co. KG, Binzen, Germany
3	DEVELOPMENT AND MODELLING OF PROCESS CONTROL FOR SCALE UP AND OPTIMISATION OF PHARMACEUTICAL HIGH SHEAR WET GRANULATION	Attfield E. Luisa ^{1,2} , Munu Issa ^{1,3} , Crooks Jason ² , Mustafa Mahmood ² , Windows-Yule R.K. Christopher ¹ , Ingram Andrew ¹	1 School of Chemical Engineering, The University of Birmingham, Birmingham, UK 2 Drug Product Development, GSK, Ware, UK 3 Global Supply Chain, GSK, Ware, UK
4	IMPACT OF THE COMPRESSION PROPERTIES OF RAW MATERIALS	Erica ranceschinis ¹ , Andrea Zanotti ¹ , Giuseppe Buratti ² , Andrea Gelain ²	1 Department of Pharmaceutical and Pharmacological Sciences, University of Padova, Padova, Italy 2 Freund Inc., Villasanta (MB), Italy
5	REVEALING LIQUID INGRESS DYNAMICS IN POWDER BEDS USING TERAHERTZ TIME-DOMAIN SPECTROSCOPY	Teodor M. de V. Weywadt ^{1,3} , Moritz Anuscheck ² , Tobias Eifler ⁴ , Ulrich Krühne ³ , Alessandro Gulotta ¹ & Jari P. Pajander ²	1 Novo Nordisk A/S, Bagsværd, Denmark 2 Novo Nordisk A/S, Måløv, Denmark 3 Technical University of Denmark, Department of Chemical and Biochemical engineering, Lyngby, Denmark 4 Technical University of Denmark, Department of Civil and Mechanical Engineering, Lyngby, Denmark

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6	REAL TIME MAGNETIC RESONANCE IMAGING AND NUMERICAL MODELLING OF GAS-SOLID HYDRODYNAMICS IN VIBRATED BUBBLING FLUIDIZED BEDS	Melis Özdemir ¹ , Nick Hildebrandt ² , Muhammad drian ¹ , Till Lenczyk ¹ , Swantje Pietsch-Braune ² , Stefan Benders ¹ , Stefan Heinrich ² , Alexander Penn ¹	1 Hamburg University of Technology (TUHH), Institute of Process Imaging (IPI) Hamburg, Germany 2 Hamburg University of Technology (TUHH), Institute of Solids Process Engineering and Particle Technology (SPE), Hamburg, Germany
7	CT IMAGE-BASED ANALYSIS OF THE FRACTURE CHARACTERISTICS OF AGGLOMERATES USING DIGITAL IMAGE CORRELATION METHODS	Yannik Sinnwell , Vanessa Schäfer, Kai Nikolaus, Sergiy Antonyuk	Institute of Particle Process Engineering, University of Kaiserslautern-Landau (RPTU), Gottlieb
8	TRICALCIUM CITRATE AS A FILLER IN DIRECT COMPRESSION: IMPACT ON MINITABLET FORMULATION AND MANUFACTURING	Maike Hafels ¹ , Amelie M. Mattusch ² , Kristina Steffens ¹ , Nicole Teichmann ² & Karl G. Wagner ¹	1 Universität Bonn, Pharmazeutische Technologie und Biopharmazie, Bonn, Germany 2 Jungbunzlauer Ladenburg GmbH, Application Development, Ladenburg, Germany
9	REAL-TIME MAGNETIC RESONANCE IMAGING AND NUMERICAL MODELLING OF HYDRODYNAMICS IN VIBRATED BUBBLING FLUIDIZED BEDS	Nick Hildebrandt ¹ , Melis Özdemir ² , Alexander Penn ² & Stefan Heinrich ¹	1 Institute of Solids Process Engineering and Particle Technology, Hamburg University of Technology, Hamburg, Germany 2 Institute of Process Imaging, Hamburg University of Technology, Denickestraße, Germany
10	FLOWSHEET IMULATION AND OPTIMIZATION OF THE LACTOSE DRYING PROCESS IN AN INDUSTRIAL CONTINUOUS FLUIDIZED BED DRYER	Xiye Zhou ¹ , Vasyl Skorych ¹ , Katja Milkreiter ² , Ricarda Leister ² & Stefan Heinrich ¹	1 Institute of Solids Process Engineering and Particle Technology, Hamburg University of Technology, Hamburg, Germany 2 MEGGLE GmbH & Co. KG, Wasserburg am Inn, Germany
11	GRANULATION AND SEGREGATION IN MODELED VIBRATING BEDS OF BIDISPERSE GRANULAR MIXTURES	Joseph M. Monti ¹ , Emad Renfro ² , & Jeremy B. Lechman ¹	1 Energetic/Multi-Phase/Soft Matter Science Department, Sandia National Laboratories, New Mexico, USA 2 School of Chemical & Biomolecular Engineering, Georgia Institute of Technology, Ferst Drive, Georgia, USA

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Poster number	Poster topic	Presenters	Group
12	PREDICTION OF TABLETABILITY OF BINARY POWDER MIXTURES FROM A SINGLE COMPRESSION EXPERIMENT	Ann-Sofie Persson , Josefina Nordström, Göran Alderborn	Department of Pharmaceutical Biosciences, Uppsala University, Uppsala, Sweden
13	SPRAY IT, COAT IT, TRACK IT: IMPEDANCE SPECTROSCOPY FOR IN-LINE MEASUREMENTS IN FLUIDIZED BED SPRAY GRANULATION	Maike Orth ¹ , Maximilian Becker ² , Anupam Kumar ³ , Dennis Kähler ² , Matthias Kuhl ³ , Thorsten A. Kern ² & Stefan Heinrich ¹	1 Institute of Solids Process Engineering and Particle Technology, Hamburg University of Technology, Hamburg, Germany 2 Institute for Mechatronics in Mechanics, Hamburg University of Technology, Hamburg, Germany 3 Department of Microsystems Engineering, University of Freiburg, Freiburg, Germany
14	RAPID MONITORING OF PHARMACEUTICAL POWDER PARTICLE SIZE AND DISTRIBUTION USING TERAHERTZ PROCESS ANALYTICAL TECHNOLOGY	Chi-Ki Leung & J. Axel Zeitler	Department of Chemical Engineering and Biotechnology, Philippa Fawcett Drive, Cambridge, UK
15	FEASIBILITY ASSESSMENT OF TWIN SCREW WET GRANULATION OF A CINNARIZINE NANOSUSPENSION	Erasmus Ragucci ¹ , Victoria Pauli ² , Florence esvignes ² , Lucia Zema ¹ , Alice Melocchi ¹ , Mauro Serraton ²	1 Dipartimento di Scienze Farmaceutiche, Sezione di Tecnologia e Legislazione Farmaceutiche "M. E. Sangalli", Università degli Studi di Milano, Milano, Italy. 2 Novartis Pharma AG, Forum 1 Novartis Campus Basel, Switzerland
16	DEVELOPMENT AND MODELLING OF PROCESS CONTROL FOR SCALE UP AND OPTIMISATION OF PHARMACEUTICAL HIGH SHEAR WET GRANULATION	Attfield E. Luisa ^{1,2} , Munu Issa ^{1,3} , Crooks Jason ² , Mustafa Mahmood ² , Windows-Yule R.K. Christopher ¹ , Ingram Andrew ¹	1 School of Chemical Engineering, The University of Birmingham, Birmingham, UK 2 Drug Product Development, GSK, Park Rd, Ware, UK 3 Global Supply Chain, GSK, Priory St, Ware, UK
17	CONTINUOUS SPRAY FLUIDIZED BED AGGLOMERATION: INFLUENCE OF GAS INLET TEMPERATURE AND BINDER CONTENT ON GROWTH AND MORPHOLOGY	Aisel Ajalova , Torsten Hoffmann, Evangelos Tsotsas	Thermal Process Engineering, Otto-von-Guericke-University, Magdeburg, Germany

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18	DIGITAL TWIN DEVELOPMENT FOR HIGH SHEAR GRANULATION PROCESSES	Oliver R. O. Massaad , Ulrich Krühne	Department of Chemical and Biochemical Engineering, Process and Systems Engineering Centre (PROSYS), Technical University of Denmark (DTU), Lyngby, Denmark
19	TABLETING OF DRY-GRANULATED METHANOL SYNTHESIS CATALYST	Fabian Neumann , Lucas Warmuth, Stephan Pitter & Moritz Wolf	Institute of Catalysis Research and Technology, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany
20 (Paper 64)	LAB-SCALE FLUID BED GRANULATION USING THE SOLID LAB 1 SYSTEM	Jash J. Asher ¹ , Mohammed A. man ¹ , Sydney Butikofer ³ , Jonathan Wade ³ , Paul R Mort ²	1 Purdue University, School of Chemical Engineering, West Lafayette, IN, USA 2 Purdue University, School of Materials Engineering, West Lafayette, IN, USA 3 Eli Lilly and Company, Indianapolis, IN, USA
21	VISION AI FOR HIGH-SHEAR GRANULATION PROCESS MONITORING	Domen Kitak ¹ , Andraž Mehle ¹ & Dejan Tomaževič ^{1,2}	1 Sensum, Computer Vision Systems, Ljubljana, Slovenia 2 Faculty of Electrical Engineering, University of Ljubljana, Slovenia
22	OPTIMIZATION OF GRANULATION FOR IMPROVED CERAMIC-MICROSPHERE COMPOSITES USING BIO-BASED BINDERS FOR THERMAL INSULATION APPLICATIONS	Avik De ^{1,2} , Praveen Wilson ¹ , Sara Wallstén ² & Farid Akhtar ¹	1 Division of Materials Science, Luleå University of Technology, Luleå, Sweden. 2 MoRe Research Örnsköldsvik AB, Domsjö, Sweden
23	ENABLING AUTONOMOUS POWDER COMPACTION: FOCUS ON REAL-TIME DATA	René Brands , Jens Bartsch & Markus Thommes	Laboratory of Solids Process Engineering, Department of Biochemical and Chemical Engineering, TU Dortmund University, Dortmund, Germany
24 (Paper 65)	EFFECT OF LACTOSE AND MCC RATIO ON CONTINUOUS TABLETINGLINE: STEPS FROM GRANULETION TO TABLETING	Shengda Hou , Chalak Omar & Agba Salman	School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK

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Poster number	Poster topic	Presenters	Group
25	TSWG DEVELOPMENT IN LABORATORY BENCHTOP EXPERIMENTS	Catarina G. Luz ^{1,2} , Rodrigo Neto ¹ , João F. Pinto ² , Slavomira Doktorovová ¹ & Ricardo Sousa ¹	1 Oral Drug Product Development, Hovione Farmaciência S.A., Lisbon, Portugal 2 Dept. of Pharmacy, Faculty of Pharmacy of the University of Lisbon, Lisbon, Portugal
26	LEVERAGING MICROWAVES AS A PROCESS ANALYTICAL TECHNOLOGY (PAT) TOOL IN THE PHARMACEUTICAL INDUSTRY	Mateusz Mróz ^{1,2} , Malgorzata Sznitowska ²	1 Manufacturing Science and Technology Department, Polpharma Works, Starogard Gdanski, Poland, 2 Department of Pharmaceutical Technology, Medical University of Gdansk, Gdansk, Poland
27	INFLUENCE OF RHEOLOGICAL PROPERTIES OF BINDER ON GRANULES PRODUCED IN A CONTINUOUS PROCESS	Munir Mohammedali, Nejat Rahmanian	Chemical Engineering Division, School of Engineering, Faculty of Engineering and Digital Technologies, University of Bradford, Bradford, UK
28	EXPERIMENTAL AND COMPUTATIONAL EVALUATION OF THE TENSILE STRENGTH OF ENCAPSULATED PEPPERMINT ESSENTIAL OIL POWDERS	Alexandros Georgios Stavrou ^{1,2} , Ioannis Nikolakakis ¹ , Colin Hare ² , Ioannis Partheniadis ¹	1 Laboratory of Pharmaceutical Technology, School of Pharmacy, Faculty of Health Sciences, Aristotle University of Thessaloniki, Greece 2 School of Engineering, Newcastle University, United Kingdom
29	CONTROLLING BRIDGING LIQUID DROPLET SIZE USING A MEMBRANE EMULSION GENERATOR FOR SIZE CONTROLLED SPHERICAL AGGLOMERATION	Jediah Capindale ^{1,2} , Arun Sasidharanpillai ^{1,2} , Francesca Magnasco ¹ , Kate Pitt ¹ , Denis Cumming ^{1,2} and Rachel M. Smith ^{1,2}	1 School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK 2 The Faraday Institution, Quad One, Harwell Science and Innovation Campus, Didcot, UK
30	DEVELOPMENT AND VALIDATION OF MATERIAL SPARING TECHNIQUE FOR ROLLER COMPACTION PROCESS	Pratap Kasina ¹ , Neha Singh ¹ , Sarath Repaka ¹ , Shaikh Mohsin Shaikh Hamid ¹ , Saikat ukhopadhyay ¹ , Bindhu Gururajan ² & Maximilian Eggersdorfer ³	1 Pharmaceutical Development, Novartis Health Care Pvt Ltd, Hyderabad, India 2 Pharmaceutical Development, Novartis AG, Basel, Switzerland 3 Materials Science, Novartis AG, Basel, Switzerland

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Poster number	Poster topic	Presenters	Group
31	AEROSOL COATING OF NANOPARTICLES IN A PROCELL SPOUTED BED	Subash R. Kolan , Rui Wang, Torsten Hoffmann & Evangelos Tsotsas	Thermal Process Engineering Department, Otto von Guericke University, Magdeburg, Germany
32	DETERMINATION OF TEMPERATURE-HUMIDITY REGIME MAP OF A HIGH SHEAR GRANULATOR USING SPECIAL SENSORS AND ANN BASED MODELLING	Flórián Benkő , Yousif Ibrahim, Katalin Kristó, Tamás Sovány	University of Szeged, Institute of Pharmaceutical Technology and Regulatory Affairs, Szeged, Hungary
33	HYBRID MODELLING OF FLUID BED GRANULATION	Maksym Dosta , Martin Maus	Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach, Germany
34	DETECTION AND MACHINE LEARNING MODELING OF SPRAY NOZZLE BLOCKAGE AS A PROCESS ANOMALY IN FLUIDIZED BED SPRAY GRANULATION PROCESSES FOR QUALITY ASSURANCE	Katharina Mohrdieck , Robert Kräuter, Swantje Pietsch-Braune & Stefan Heinrich	Hamburg University of Technology, Institute of Solids Process Engineering and Particle Technology, Germany
35	SIMULATION OF WET PARTICLES' COLLISION IN GRANULATION SYSTEMS	Maryam Askarishahi ^{1,2} , Mohammadsadegh Salehi ²	1 Research Center Pharmaceutical Engineering (RCPE) GmbH, Graz, Austria 2 Institute of Process and Particle Engineering, Graz University of Technology, Graz, Austria
36	UNDERSTANDING DIE-WALL FRICTION IN TABLET COMPRESSION: A COMPREHENSIVE STUDY OF THE LOADING-UNLOADING CYCLE	Marilena Marinaki , Ann-Sofie Persson & Göran Frenning	Department of Pharmaceutical Biosciences, Uppsala University, Uppsala, Sweden
37	MODELING DROPLET DRYING AND SOLIDIFICATION IN SPRAY DRYING PROCESSES USING CFD-DEM SIMULATIONS	Moritz Buchholz ¹ , Riccardo Togni ² , Dominik Weis ¹ , Christoph Goniva ² & Stefan Heinrich ³	1 BASF SE, Ludwigshafen, Germany 2 DCS Computing GmbH, Linz, Austria 3 TU Hamburg, Institut für Feststoffverfahrenstechnik und Partikeltechnologie, Hamburg, Germany

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38	INFLUENCE OF BOTTOM-SPRAY IN FLUID BED GRANULATION	Matthias Börner ¹ , Maïke Orth ² & Stefan Heinrich ²	1 Hüttlin GmbH - Syntegon Technology, Hohe-Flum-Strasse, Schopfheim, Germany 2 Institute of Solids Process Engineering and Particle Technology, Hamburg University of Technology, Hamburg, Germany
39	THE INHERENT ROBUSTNESS OF CONTINUOUS WET GRANULATION	Sally M. Karlsen ¹ , Håkan Wikström ² , Erik Walkhed ² , Fredrik Winge ³ , Guzman Carissimi ⁴ , Jukka Rantanen ¹ & Pirjo Tajarobi ²	1 Department of Pharmacy, University of Copenhagen, Copenhagen, Denmark 2 Early Product Development and Manufacturing, Pharmaceutical Sciences, BioPharmaceuticals R&D, AstraZeneca, Gothenburg, Sweden 3 Oral Product Development, Pharmaceutical Technology & Development, AstraZeneca, Gothenburg, Sweden 4 Oral Product Development, Pharmaceutical Technology & Development, AstraZeneca, Macclesfield, UK
40	IMPACT OF FREEZING RATE AND EXCIPIENTS ON THE QUALITY OF FREEZE-DRIED INDOMETHACIN NANOSUSPENSIONS	Vojtěch Klimša ¹ , Stanislav Chvíla ¹ , Tuan A. Pham ² , Gabriela Ruphuy ¹ , František Štěpánek ¹	1 University of Chemistry and Technology Prague, Prague, Czech Republic 2 BÜCHI Labortechnik AG, Flawil, Switzerland
41	COLOUR ANALYSIS OF PHARMACEUTICAL TABLET COATINGS	Rok Šibanc	Oral Solids, Pharmaceuticals, Bayer, Elberfeld, Germany
42	NEW INSIGHTS INTO THE ANGLE OF REPOSE FORMATION: THE EFFECT OF RESTITUTION COEFFICIENT OF COATED DAIRY POWDER	Yongang Ma & Agba D Salman	School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK
43	RESTRUCTURING OF MILK POWDER: SINGLE DROPLET DRYING IN THE SPRAY DRYER	Xuqian Li , Riyadh B Al-Asady & Agba.D. Salman	School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK

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44	TOWARDS SMART MANUFACTURING: IN-DEPTH REAL-TIME UNDERSTANDING OF GRANULE BEHAVIOUR IN CONTINUOUS SYSTEMS	Jeanina-Monica Bungău , James D. Litster & Agba D. Salman	School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK
45	INVESTIGATION OF THE HOMOGENEITY OF PARTICLE SUSPENSION	Zheng Wang ¹ , Constantijn Sanders ² & Agba D. Salman ¹	1 School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK 2 Nestlé Product Technology Centre, Konolfingen, Switzerland
46	CONTINUOUS WET GRANULATION: EFFECT OF PROCESS TIME ON TWIN SCREW POWDER CAKING USING HIGH PERCENTAGE OF LACTOSE	Shengda Hou & Agba Salman	School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK
47 (Paper 66)	ROLLER COMPACTION: THE CHANGE IN SIZE DISTRIBUTION DURING DIFFERENT STAGES OF THE PROCESS	Mohamed N. Badri ¹ , Riyadh B. Al-Asady ¹ , Manfred Felder ² & Agba D. Salman ¹	1 School of Chemical, Materials and Biological Engineering, University of Sheffield, Sheffield, UK 2 Alexanderwerk AG, Remscheid, North Rhine-Westphalia, Germany
48	DEVELOPMENT OF AN ADVANCED PROCESS CONTROL (APC) APPROACH FOR TABLET QUALITY IN A CONTINUOUS PROCESS	Francesca Pinna ¹ , Gavin K. Reynolds ² , Pirjo Tajarobi ³ , Muhammad Ahmer ⁴ , James D. Litster ¹ & Agba D. Salman ¹	1 School of Chemical, Materials and Biological Engineering, University of Sheffield, UK 2 Sustainable Innovation & Transformational Excellence (xSITE), Pharmaceutical Technology & Development, Operations, AstraZeneca, Macclesfield, UK 3 Early Product Development and Manufacturing, Pharmaceutical Sciences, BioPharmaceuticals R&D, AstraZeneca, Gothenburg, Sweden 4 Oral Product Development, Pharmaceutical Technology & Development, Operations, AstraZeneca, Gothenburg, Sweden
49 (Paper 67)	EXPERIMENTAL RESEARCH ON THE COMPRESSION BEHAVIOR OF ULTRAFINE ALUMINA POWDERS UNDER GAS PRESSURIZATION	Yunfei Yang , Xiaolei Guo, Shicheng Wang, Haifeng Lu & Haifeng Liu	Shanghai Engineering Research Center of Coal Gasification, East China University of Science and Technology, Shanghai, China

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50 (Paper 68)	COMPARATIVE STUDY ON THE COMPRESSION CHARACTERISTICS OF COAL AND BIOMASS POWDER BED	Shicheng Wang, Xiaolei Guo, Yunfei Yang, Haifeng Lu, Haifeng Liu	National Energy Research Center of Coal Gasification Technology, East China University of Science and Technology, Shanghai, China
51 (Paper 69)	CONTINUOUS MICRO FEEDING AND MIXING OF SOLID DOSAGE FORMS UNDER VIBRATIONAL EXCITATION	Liang Zhanga¹, Haifeng Lua ¹ , Zixuan Houa ¹ , Xiaolei Guoa ¹ & Haifeng Liu ^{1,2}	1 State Key Laboratory of Coal Liquification, Gasification and Utilization with High Efficiency and Low Carbon Technology, National Energy Coal Gasification Technology Research and Development Center, East China University of Science and Technology, Shanghai, China 2 Liaoning Petrochemical University, Liaoning, China