

2024, NOV 5-7

FREUND EUROPEAN LAB

VIA E. MATTEI, 2, 20852
VILLASANTA, ITALY



2024

IN-PERSON TECHNICAL SEMINAR...

Focusing on Granulation & Coating Technologies

 **FREUND**



OVERVIEW

FREUND

Since 1964, The FREUND group has been a global leader of processing solutions for powders, particles, beads, pellets, tablets, and other solid materials for industries including pharmaceutical, nutraceutical, food, industrial, energy, and many more.

Applications include wet and dry granulation, drying, agglomerating, coatings, layering, instantizing, and densification.

WHY ATTEND?

In our workshop, participants will actively participate in a practical and theoretical introduction to solid material processing. A comparison overview of fluid bed granulation and coating, high shear wet granulation, roll compaction dry granulation, tablet pan coating and spray drying will be presented and demonstrated.



AGENDA

DAY ONE | Tuesday, 2024, Nov 5

It's a Matter of Understanding!		
8:45am to 9:00 am	Welcome/Introductions	Raffaella Colombo
9:00 am to 9:45 am	High Shear Technology: Wet Granulation & Milling <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Giuseppe Buratti
9:45 am to 10:30 am	Fluid Bed Technology: Top Spray Granulation <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Andrea Gelain
10:30 am to 10:45 am	Break	
10:45 am to 11:30 am	Roll Compaction Technology: Dry Granulation <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Garrett Alfred
11:30 am to 12:15 pm	PAT via NIR Applications <ul style="list-style-type: none"> • Moisture • Particle Size Distribution • Film Thickness 	Andrea Gelain
12:15 pm to 13:15 pm	Catered Lunch	
LAB SESSIONS 13:15 pm - 16:15 pm		
	High Shear Wet Granulation <ul style="list-style-type: none"> • Proper Equipment Set-Up • Wet Milling • Fluid Bed Drying • Product Analysis (LOD Analysis) 	Giuseppe Buratti
	Fluid Bed: Top Spray Granulation + PAT <ul style="list-style-type: none"> • Proper Equipment Set-Up • Proper Product Movement • Process Optimization • Product Analysis (QICPIC + NIR Moisture and PSD) 	Andrea Gelain
	Roll Compaction: Dry Granulation <ul style="list-style-type: none"> • Dry Milling • Process Optimization • Product Analysis (QICPIC) 	Garrett Alfred
16:15 pm	Wrap Up/Leave for Hotel	
18:00 pm	Reception: Dinner + Wine Tasting	

AGENDA

DAY TWO | Wednesday, 2024, Nov 6

It's a Matter of Understanding!		
8:45 am to 9:30 am	Fluid Bed Technology: Wurster Spray Coating <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Andrea Gelain
9:30 am to 10:15 am	Fluid Bed Technology: GXR Rotor Processor Coating of Multi-Particulates <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Garrett Alfred
10:15 am to 10:30 am	Break	
10:30 am to 11:30 am	Granulation Formulation Considerations: <ul style="list-style-type: none"> - Selection of Excipients - Use of Binders, Fillers, Glidants, Lubricants & Disintegrants 	Colorcon or FEL
11:30 am to 12:30 pm	Basics of Film Coating Formulation: <ul style="list-style-type: none"> - Basic Formulation Ingredients – Polymers, Plasticizers, Colorants and Solvents 	Colorcon
12:30 pm to 13:30 pm	Catered Lunch	
LAB SESSIONS 13:30 pm - 15:30 pm		
	Fluid Bed: Wurster (Bottom) Spray Coating <ul style="list-style-type: none"> • Proper Equipment Set-Up • Proper Product Movement • Process Optimization • Product Analysis (QICPIC) 	Andrea Gelain
	Fluid Bed: Rotor Powder Layering <ul style="list-style-type: none"> • Proper Product Movement • Proper Spray System Set-Up • Process Optimization • Product Analysis (QICPIC) 	Garrett Alfred
15:30 pm	Wrap Up	
15:45 pm	Activity and Dinner	

AGENDA

DAY THREE | Thursday, 2024, Nov 7

It's a Matter of Understanding!		
8:45 am to 9:45 am	Equipment and Process Trouble Shooting <ul style="list-style-type: none"> • Granulation Processes and Equipment • Coating Processes and Equipment 	Andrea Gelain Garrett Alfred
9:45 am to 10:30 am	Process Optimization by DOE <ul style="list-style-type: none"> • Screening • Iteration and Refinement • Optimization • Assessing Robustness 	Milan University
10:30 am to 10:45 am	Break	
10:45 am to 11:30 am	Perforated Pan Coating Technology <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Giuseppe Buratti
11:30 am to 12:15 pm	Spray Drying Technology <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design 	Garrett Alfred
12:30 pm to 13:30 pm	Catered Lunch	
LAB SESSIONS 13:30 pm - 15:30 pm		
	Tablet Pan Coating + NIR <ul style="list-style-type: none"> • Proper Equipment Set-Up • Proper Product Movement • Process Optimization • NIR Film Thickness Analysis 	Giuseppe Buratti Andrea Gelain
	Spray Drying <ul style="list-style-type: none"> • Proper Atomization Techniques • Proper Spray System Set-Up • Process Optimization • Product Analysis (QICPIC) 	Garrett Alfred
15:30 pm	Wrap Up/ Seminar Complete	



LIST OF PRESENTERS



Raffaella Colombo

International Sales Manager

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Raffaella's background is in the packaging equipment for the pharma industry and has been working in that industry for more than 10 years. She was with our sister company FRUEND S.r.l for six years before joining FREUND Inc. six years ago. She has a degree in Foreign Languages and Literatures by IULM University in Milan, and can speak six languages: English, Russian, French, German, Italian and very basic Modern Chinese. With over 35 years of sales experience, Raffaella enjoys talking with customers and figuring out the right solutions for their products.



Giuseppe Buratti

Deputy Branch Manager

giuseppe.buratti@freundglobal.com

Having graduated in industrial chemistry, Giuseppe took his first steps in the pharmaceutical industry as an analyst of formulations intended for clinical trials. He has been involved in formulation and development of oral solid forms for approximately 25 years as well as scaling up and technology transfer from laboratory to industrial scale. Since 2016, he has been working at the FREUND Inc. European Laboratory and is involved in the development of processes for customer support and equipment demonstration for the pharmaceutical, nutritional, chemical, and nuclear sectors. He contributed to company visibility by publishing posters and scientific articles.



Andrea Gelain

Process Scientist

andrea.gelain@freundglobal.com

Andrea has been with FREUND Inc. since 2017 and works in the FREUND European Laboratory as a process development scientist where he helps customers with product formulation, process development, equipment startups and training. Andrea also performs R&D activities for scientific publications and posters. Andrea graduated from the Università degli Studi di Milano with a master's degree in pharmacy and a master's degree in chemistry and pharmaceutical technologies. After graduation, he worked for three years as a researcher in the department of pharmaceutical technology at the Università degli Studi di Milano. He also has spoken at many conferences, including the European Scientific Pharmaceutical Congresses.

LIST OF PRESENTERS



Garrett Alfred

Technical Sales Manager

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Garrett is the Technical Sales Manager at FREUND Inc. and has been with the company since 2018. He works with customers in a variety of customized applications to ensure the machines they purchase are suited to their specific needs. Prior to sales, he worked in the lab as a process development scientist, working with customers in house and in the field on new process and product developments. He graduated from the University of Iowa with a BS in chemical engineering.



Luca Palugan, PhD

Assistant Professor at Università degli Studi di Milano

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Luca obtained the degree in Pharmaceutical Chemistry and Technology in 1998 at the University of Milan. In 2003 he obtained the PhD in Technologies and Legislation of Drugs and Bioactive Molecules, and from 2005, he is an Academic Researcher. He works at the Biopharmaceutics and Pharmaceutical Technology Laboratory - GazzaLab at the Department of Pharmaceutical Sciences of the University of Milan.

Authoring around 50 papers, his main topics of his research work concern the design and manufacturing of conventional and modified release oral solid dosage forms (prolonged and delayed release, colon delivery); the formulation of nanoparticles in oral solid dosage forms; the design and manufacturing of multi-particulate pharmaceutical forms; the statistical optimization of pharmaceutical formulations and processes.

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STAY CONNECTED

We are always here for you to answer questions or talk solutions for current or upcoming projects!

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FREUND Inc. Granulation & Coating Technology Seminar

November 5-7, 2024

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