

OCTOBER 7-9, 2025

FREUND Inc.

675 44TH ST
MARION, IA 52302

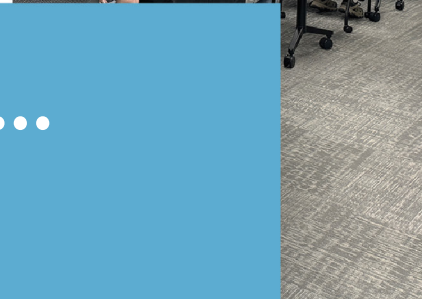
+1 319-377-8263

2025

IN-PERSON TECHNICAL SEMINAR...

Focusing on Granulation & Coating Technologies
for the Battery and Energy Industry

Attend this 3 day in-person seminar that focuses on powder processing technologies, explore advancements in materials characterization and get live hands on demonstrations of equipment. Whether you're optimizing current processes or exploring new formulations, this seminar provides the technical depth and practical knowledge needed to stay ahead in the fast-evolving space



COMPANY OVERVIEW

FREUND Inc.

Backed by over 60 years of engineering expertise - FREUND is a global leader, delivering innovative, customized, powder processing solutions to meet the ever-changing demand of the pharmaceutical, dietary supplement, food and beverage, pet health, personal care and energy/industrial industries.

Our state-of-the-art equipment ensures precision, reliability, and scalability for today's key processes; from encapsulation, coatings, densification, wet and dry granulation, milling, blending, and improving flowability – all critical for producing high-quality products.

FREUND Inc's unique in-house research laboratory accommodates multiple lab-to-pilot and production scale equipment offering customers specialized solutions in:

- ✓ Process Evaluation
- ✓ Process Development
- ✓ Process Optimization
- ✓ Process Scale-Up
- ✓ Process Troubleshooting
- ✓ Product Development
- ✓ Product Evaluation
- ✓ Product Feasibility Testing
- ✓ Formulation Assistance
- ✓ Technology Transfer
- ✓ Training



AGENDA

DAY ONE | Tuesday, Oct 7, 2025

It's a Matter of Understanding!		
8:00am to 8:15 am	Welcome	Greg Smith/Matt Winkler
8:15 am to 8:45 am	Technology Overview	Mitch Crawford
8:45 am to 9:30 am	High Shear Technology: Wet Granulation & Milling <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Mitch Crawford
9:30 am to 10:15 am	Fluid Bed Technology: Top Spray Granulation <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Tim Smith
10:15 am to 10:30 am	Break	
10:30 am to 11:15 am	Fluid Bed Technology: Wurster Spray Coating <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Garrett Alfred
11:30 am to 12:30 pm	Catered Lunch	
LAB SESSIONS 12:30 pm - 5:00 pm		
High Shear Wet Granulation <ul style="list-style-type: none"> • Proper Equipment Set-Up • Wet Milling • Fluid Bed Drying • Product Analysis (LOD Analysis and QICPIC) 		Mitch Crawford
Fluid Bed: Top Spray Granulation <ul style="list-style-type: none"> • Proper Equipment Set-Up • Proper Product Movement • Process Optimization • Product Analysis (QICPIC) 		Tim Smith
Fluid Bed: Wurster (Bottom) Spray Coating <ul style="list-style-type: none"> • Proper Equipment Set-Up • Proper Product Movement • Process Optimization • Product Analysis 		Garrett Alfred
5:00 pm	Wrap Up/Leave for Hotel	
TBD	Evening Dinner	

AGENDA

DAY TWO | Wednesday, October 8, 2025

It's a Matter of Understanding!		
8:00 am to 8:45 am	Roll Compaction Technology: Dry Granulation <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design • Scale-Up and Optimization 	Garrett Alfred
8:45 am to 9:30 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 	Tim Smith
9:30 am to 9:45am	Break	
9:45 am to 10:30 am	Spray Drying Technology <ul style="list-style-type: none"> • Applications • Process Principles • Equipment Design 	Mitch Crawford
10:30 am to 11:30 am	Particle Sizing and Shape Analysis <ul style="list-style-type: none"> • Shape Evaluation Criteria • Dynamic Imaging – Monitor Process, Material Performance and Troubleshooting • Size Definitions: Choosing Based on Particle Shape 	Alan Pieper SYMPATEC
11:30 am to 12:30 pm	Catered Lunch	
LAB SESSIONS 12:30 pm - 3:30 pm		
	Roll Compaction: Dry Granulation <ul style="list-style-type: none"> • Dry Milling • Process Optimization • Product Analysis 	Garrett Alfred
	Fluid Bed: Rotor Powder Layering <ul style="list-style-type: none"> • Proper Product Movement • Proper Spray System Set-Up • Process Optimization • Product Analysis 	Tim Smith
	Spray Drying <ul style="list-style-type: none"> • Proper Atomization Techniques • Proper Spray System Set-Up • Process Optimization • Product Analysis (QICPIC) 	Mitch Crawford
3:30 pm	Wrap Up/Leave for Hotel	
TBD	Evening Dinner	

AGENDA

DAY TWO | Thursday, October 9, 2025

It's a Matter of Understanding!		
8:00 am to 9:30 am	Equipment and Process Trouble Shooting <ul style="list-style-type: none"> • Granulation Processes and Equipment • Coating Processes and Equipment 	Tim Smith
LAB SESSIONS 9:30 am - 11:00 am		
	Roll Compaction: Dry Granulation <ul style="list-style-type: none"> • Dry Milling • Process Optimization • Product Analysis 	Garrett Alfred
	Fluid Bed: Rotor Powder Layering <ul style="list-style-type: none"> • Proper Product Movement • Proper Spray System Set-Up • Process Optimization • Product Analysis 	Tim Smith
	Spray Drying <ul style="list-style-type: none"> • Proper Atomization Techniques • Proper Spray System Set-Up • Process Optimization • Product Analysis (QICPIC) 	Mitch Crawford
11:00 am to 11:30 am	Tour	
11:30 am to 12:30 pm	Catered Lunch	
12:30 pm	Seminar Complete	



LIST OF PRESENTERS



Mitch Crawford

Lab Manager

mitch.crawford@freundglobal.com

Mitch has been with FREUND Inc. since 2012. He graduated from Iowa State University with a BS in Mechanical Engineering and started working for FREUND as a Technical Service Engineer. He joined the lab in 2018 and worked on many customer projects as well as R&D efforts, including four AAPS posters. In 2023 he became the laboratory manager.



Tim Smith

Senior Process Development Scientist

tim.smith@freundglobal.com

Tim has been involved with the design and development of equipment and processes for the pharmaceutical, food, confectionary, energy, aerospace, computer, aseptic, and natural resource industries for over 40 years. Tim has worked in university and corporate settings as a research and development engineer, process application engineer, project manager, and is currently a process development scientist at FREUND Inc. Tim participates in university and industry seminars/webinars, poster presentations at AAPS, and has written a book chapter and trade journal articles in order to share his processing experiences. Tim has a BS in Chemical Engineering and a MS in Food Science from Iowa State University.



Garrett Alfred

Technical Sales Manager

garrett.alfred@freundglobal.com

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.



Alan Pieper

Sales and Application Manager USA Midwest

apieper@sympatec.com

Alan is the SYMPATEC application and sales manager for the Midwest, configuring and testing for particle size and shape using laser diffraction, dynamic imaging, dynamic light scattering, and acoustic extinction technologies for the last 25 years. He has over 34 years of material characterization experience in many different industries. He graduated from Indiana State University with a BS in Geology.

DOMESTIC SALES



Don Foltz

District Sales Manager, MidEast Region

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Ryan Rentschler

District Sales Manager, Eastern Region

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Jamie Frizzell

VP, Global Business Development

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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. Battery and Energy Granulation & Coating Technology Seminar

October 7-9, 2025

REGISTRATION FORM *(editable PDF)*

Name: _____

Job Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Bus.Tel: _____

Email: _____

Polo Size: S M L XL XXL Other _____

SEMINAR FEE: \$1,450.00

Dietary Restrictions: Y N

If Yes, Please Explain: _____

Bank Wire (Payable to FREUND Inc.)

Credit Card

VISA Master Card American Express Security Code: _____

Card # _____ Exp. Date: _____ (mm/yy)

Cardholder's Name: (Please Print) _____

Signature: _____ Zip Code: _____



Return Registration Form:
email: matt.winkler@freundglobal.com

