



— • — **Late registration closes: January 14, 2009** — • —

Click on workshop title to learn more. Check website for future 2009 dates & locations.

W1. Powder Flow I: Measuring Powder Flowability & Its Applications

Nashville, TN • January 19-20, 2009 • [Registration flyer](#)

An intense 2-day powder flow & handling workshop, for those involved in industrial chemical, pharmaceutical or solids processing issues in which flow properties are critical, including material handling, segregation, feeding, roll pressing and tableting. This course lays the groundwork for understanding the unique nature of powder flow properties, and its impact on processing and compaction, through team design problems & first hand flow measurements by shear & permeability cell, fluidization & segregation testing. Roll compactor/tableting demos.

W2. Powder Flow II: Industrial Solids Handling - Plant Design & Operation

Nashville, TN • January 21-23, 2009 • [Registration form](#) • **New Course!**

By popular request, a new follow-on companion workshop treating industrial applications of the solids flow principles of Powder Flow I, delving into commonly encountered design & operational issues of powder systems. Topics include unassisted mass/funnel flow discharge; flow promoting devices, aeration and vibration; feeders; conveying of powders; & processing of segregating blends. This course is useful for anyone optimizing current or designing future solids handling systems. It presumes a requisite knowledge of powder flow principles such as Powder Flow I, or equivalent experience.

W3. An Introduction to Powder Processing

Nashville, TN • January 19-20, 2009 • [Registration form](#) • **New Course!**

A new, first powder technology workshop introducing participants to the unique attributes of powders, contrasted to more well understood liquids, and the impact of these complexities on solids processing. Topics include powder characterization; segregation & powder sampling; and an overview of key unit operations of mixing, grinding, agglomeration, classification, fluidization, and drying, as well as solids transport between unit operations.

W4. Granulation & Compaction Processes for Enhanced Product Performance

Nashville, TN • January 21-23, 2009 • [Registration flyer](#)

This agglomeration workshop is a relatively advanced course drawing heavily on the interaction between powder properties and unit-operations, covering a variety of granulation (fluid-bed, discs, pans, mixers) and compaction processes (roll pressing, tableting, extrusion) as well as formulation techniques. It emphasizes the marriage between formulation properties, characterization techniques, and engineering scale-up in controlling granule & compact quality. Mini roller compactor and high shear mixer granulator, and fluid-bed demonstrations.

Detailed course information: [Click here](#)

Registration questions: william@evinsmill.com • 615.269.3740 • www.evinsmill.com

Course contact questions should be directed to: courses@evinsmill.com

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Upcoming E&G Workshop:
W1. Powder Flow I: Measuring Powder Flowability & Its Applications: A Hands-On Design Oriented Workshop

W1. Powder Flow I: Measuring Powder Flowability & Its Applications: A Hands-On Design-Oriented Workshop

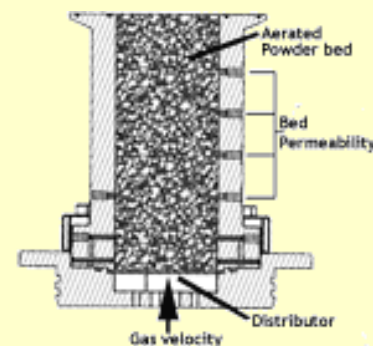
Nashville, TN • January 19-20, 2009 • [Registration form](#)

An intense 2-day powder flow & handling workshop, for those involved in solids processing issues in which flow properties are critical, including material handling, feeding operations, roll pressing and tableting. This course lays the groundwork for understanding the unique nature of powder flow properties, and its impact on processing & compaction, through team design problems and first hand lab measurements. **Highlights include:**

- Team design problems in hopper arching/ratholing, mass feed rate, stress transmission in tableting & roll press nip pressure.
- Measurement of powder flowability, powder friction, wall friction by automated shear cell; aerated powder cohesion, permeability, and deaeration time by fluid-bed testing
- Particle sizing by imaging and laser diffraction (Sympatec Inc.)
- Understanding the impact of powder properties on hopper discharge, mass feed rates, and solids handling, and the impact of friction and permeability on tableting and roll pressing, or similar filling or compaction processes
- Hopper discharge rate, stress and segregation experiments
- Mini-roller compactor (Vector Corp.) & tablet die stress demonstrations.

Relative flow index:

<2	Difficult to handle
1.5-4	Cohesive powders
3-6	Granules
5-10	Harder excipients
10-15	Sand
>20	If fine, floodable



Workshop leader:

Dr. Bryan J. Ennis is President of E&G Associates, Inc. With three decades of experience in powder manufacturing, he has consulted for over 100 clients, including most major pharmaceutical/consumer products companies. He led agglomeration, solids handling & powder characterization programs of DuPont Engineering, and served as an Adjunct Professor of Vanderbilt Univ. He received his B.S.Ch.E. from Rensselaer Polytechnic & Ph.D. from The City College of NY. Dr. Ennis is a cofounder and previous Technical Vice-Chair of the Particle Technology Forum of the AIChE. Honors include two national AIChE awards for service to the profession, Deutscher Akademischer Austausch Dienst Award (Germany), Stanley Katz Memorial Award (City College of NY), and a Visiting Research Fellow of Delft Technische Hogeschool (Netherlands). He is the author of several other invited contributions on particle processing and Section Editor of Section 21: Solid-Solids Operations & Equipment (Powder Processing) of the *Perry's Chemical Engineer's Handbook* (8th Ed.); *Theory of Granulation: An Engineering Perspective*, in *Hdbook of Pharma Granulation*, 2nd Ed., & *The Science & Engineering of Granulation Processes*, Kluwer Academic.



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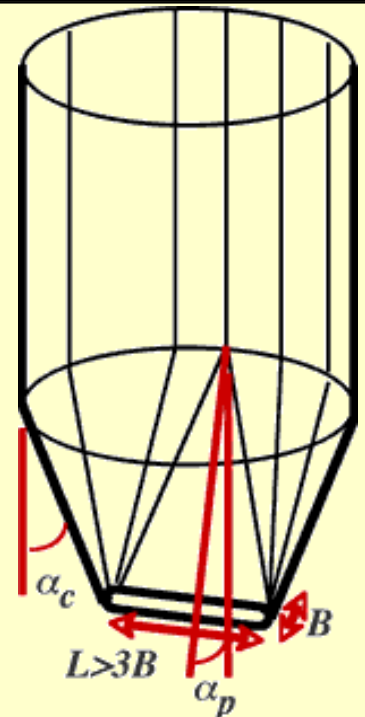


W2. Powder Flow II: Industrial Solids Handling

Nashville, TN • January 21-23, 2009 • [Registration form](#) • **New!**

Powder Flow II is a new follow-on companion workshop to Powder Flow I. It treats in detail industrial applications of the solids flow principles learned in Powder Flow I, covering many of the practical considerations encountered in the design & operation of powder systems. It presumes a requisite knowledge of powder flow principles such as Powder Flow I, or equivalent experience. For those without first hand powder flow characterization experience, we would recommend attending both workshops. Concepts are reinforced through attendee worked examples involving bin design to prevent arching/ratholing, flow insert placement, aeration requirements, feeder design, handling segregation, and conveying considerations. **Highlights include:**

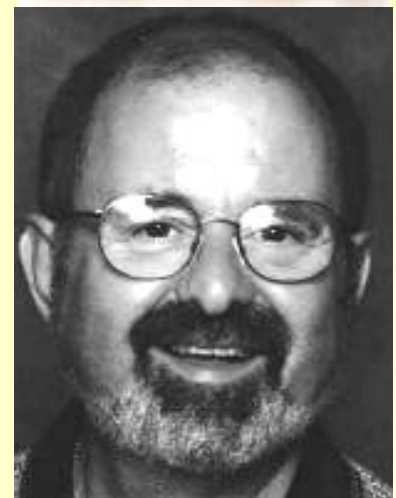
- Bin Design – Review of design of mass & funnel flow hoppers.
- Feeders – Volumetric and gravimetric, screws, belts, rotary valves.
- Aeration effects – Impact on discharge rate, methods of correction.
- Retrofits – Wedge hoppers, liners and coatings, other.
- Segregation – Practical problems/solutions to typical segregation issues.
- Flow aids – Passive and active, bin inserts, air blasters, vibrators, other.
- Chutes—Do' /don'ts, appropriate angles due to material impact pressure.
- Flow Report -- Typical flow report and design example based on report.
- Design Examples—Practical design examples, calculating critical bin dimensions with attendee worked examples.
- Modeling—Using models to understand flow issues and develop solutions.
- Conveying—Overview of mechanical and pneumatic conveying.



Workshop leader:

Joseph Marinelli, President of Solids Handling Technologies, Inc. in Fort Mill, SC is a bulk materials handling expert who has taught more than 75 highly acclaimed engineering seminars. Since 1972, he has been active in testing bulk solids and consulting on materials handling systems design, and was previously with Jenike & Johanson, Inc. Mr. Marinelli received his Bachelor of Science degree in Mechanical Engineering, from Northeastern University in Boston, MA.

He has also worked for manufacturers of solids handling equipment, such as feeders and silos. This background provides a unique blend of consulting and manufacturing experience to solve solids flow problems. He lectures frequently, teaching courses on solids flow principles and flow property testing, and has authored several papers and an encyclopedia section on the subject. He is also a columnist ("Ask Joe") for the website, www.powderandbulk.com.



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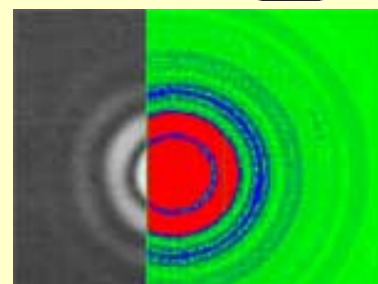
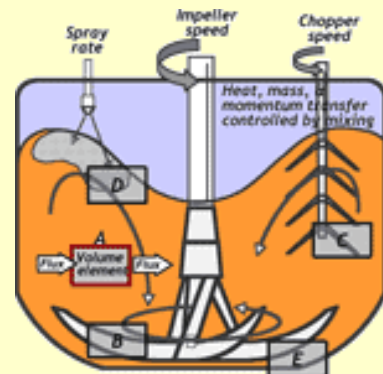


W3. An Introduction to Powder Processing

Nashville, TN • January 19-20, 2009 • [Registration form](#) • **New!**

A new, first powder technology workshop introducing participants to the unique attributes of powders, contrasted to more well understood liquids, and the impact of these complexities on solids processing. Topics include powder characterization; segregation & powder sampling; and an overview of key unit operations of mixing, grinding, agglomeration, classification, fluidization, and drying, as well as solids transport between unit operations. **Highlights include:**

- Particle Characterization – Aspects of particle size distributions, methods of measuring particle size, variations of density, and tools to measure key particle characteristics. Powder flow shear cell & particle size demos.
- Moisture Sorption – ERH and its relation to moisture content, types of isotherms, and how to use isotherm data
- Powder Handling – Introduction to solids handling, including bin design, causes of flooding & segregation, feeder basics, and pneumatic conveying
- Powder Mixing – Sampling techniques, texture vs. mobility, mixer types & selection, statistics of mixing, scale-up principles
- Agglomeration - Wet granulation vs dry compaction processes & demos.
- Grinding and Classification – Basic grinding theory and principles, types of grinders, mechanical separation, air classification
- Fluidization - Fluidization and fluid-bed drying, fluid-bed demonstration.



Workshop leader:

Jim Davis is a Principal Consultant to E&G Associates, and President of Powder Processing Solutions LLC. As a previous solids handling technical leader with Procter & Gamble, he has 26 years of experience in the optimization, design & startup of powder processing/material handling systems, spanning over 20 countries and 4 continents. He offers many practical, unique insights for resolving difficult processing problems, and for minimizing design and development costs, from his experience in developing low cost systems for low income, third world markets. Jim holds a BSc in Mechanical Engineering degree from the University of Cincinnati, and a Professional Engineer's license from the State of Ohio. He has served on the Executive Committee of the International Fine Particle Research Institute, as Chairman of the ASTM subcommittee on Powder and Bulk Systems, as Chairman of the Powder Handling subcommittee of the Particle Technology Forum of AIChE, and sits on the industrial advisory board for the trade journal Powder & Bulk Engineering.



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W4. Granulation & Compaction Processes for Enhanced Product Performance

Nashville, TN • January 21-23, 2009 • [Registration form](#)

This granulation/compaction workshop is an in-depth course drawing heavily on interactions between powder properties & unit-operations, covering a variety of granulation and compaction processes. The course emphasizes the marriage between formulation properties and engineering scale-up in controlling granule/compact quality. **Highlights include:**

- Demonstration of key controlling powder phenomena, illustrating relationships between formulation and process operation.
- Wetting, growth & consolidation, breakage in wet granulation.
- Powder friction, permeability, and flaws in tabletting & roll pressing.
- Control of granulation (fluid-beds, high shear mixers, tumbling processes).
- Control of compaction (roll pressing, tabletting, extrusion).
- Impact of lubrication/stress uniformity in tabletting, w/die demonstrations.
- Scale-up approaches to agglomeration processes, with worked examples.
- Overview of solids handling,
- In-line laser diffraction and particle sizing approaches.
- Mini-roller compactor & mixer granulator demonstrations (Vector Corp.)

Workshop leader:

Dr. Bryan J. Ennis is President of E&G Associates, Inc. With three decades of experience in powder manufacturing, he has consulted for over 100 clients, including most major pharmaceutical/consumer products companies. He led agglomeration, solids handling & powder characterization programs of DuPont Engineering, and served as an Adjunct Professor of Vanderbilt Univ. He received his B.S.Ch.E. from Rensselaer Polytechnic & Ph.D. from The City College of NY. Dr. Ennis is a cofounder and previous Technical Vice-Chair of the Particle Technology Forum of the AIChE. Honors include two national AIChE awards for service to the profession, Deutscher Akademischer Austausch Dienst Award (Germany), Stanley Katz Memorial Award (City College of NY), and a Visiting Research Fellow of Delft Technische Hogeschool (Netherlands). He is the author of several other invited contributions on particle processing and Section Editor of Section 21: Solid-Solids Operations & Equipment (Powder Processing) of the *Perry's Chemical Engineer's Handbook* (8th Ed.); *Theory of Granulation: An Engineering Perspective*, in *Hdbook of Pharma Granulation*, 2nd Ed., & *The Science & Engineering of Granulation Processes*, Kluwer Academic.



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E&G Associates: 2009 Course Registration & Application Form

Participant Information

Workshop Dates: January 19-20 & January 21-23, 2009, Nashville, TN

(Please print clearly)

Dr./Mr./Mrs./Ms.

(Please Circle One)

FIRST NAME

M.I.

LAST NAME

NICKNAME (TO APPEAR ON NAME BADGE)

COMPANY NAME

POSITION TITLE

MAILING ADDRESS

MAILING ADDRESS

CITY

STATE/PROVINCE ZIP CODE

COUNTRY

PHONE

FAX

E-MAIL

Description of process/product related issues or course objectives

Where did you hear about the course?

Colleague

E-mail notification

Trade Shows & Courses

Other: _____

General Information

I would like to receive E&G's Powder Notes Newsletter.

Notify me regarding future course offerings.

Registration Fees

Workshops (Please indicate course):

Mon-Tue: Powder Flow I or Introduction to Powder Processing
 Wed-Fri: Powder Flow II or Granulation & Compaction

Mon-Tue Workshop:

Powder Flow I
 Intro Powder Proc

Wed-Fri Workshop:

Powder Flow II
 Gran & Compact

Select below as appropriate (Reserve early to ensure your room hold):

Fill-in fees as appropriate:

Course Fees: Registration course fee and notes. Payment received by January 5, 2009.
 Payment received after January 5, 2009. **Add \$100:**
 Book by December 23, 2008 to ensure room hold.

\$	1,450.00	\$	1,850.00

Discounts: EARLY BIRD: Received by December 8, 2008. **Less 10% (\$145 or \$185):**
 OR

OR			

NOTE: Registering for two workshops entitles attendee **Less 15% (\$218 or \$278):**
 to a 15% discount. DO NOT INCLUDE EARLY BIRD DISCOUNT AS WELL.

Accommodation Fees: Food and lodging, all inclusive:

(Single Occupancy)

Mon-Tue Workshop: Sunday Dinner & Reception thru Tuesday Lunch
 Wed-Fri Workshop: Tuesday Dinner & Reception thru Friday Lunch

Contact Evins Mill for changes to accommodations. Ph: (615) 269-3740
 Accommodations are offered as an integral part of course structure & are not optional.
 Overflow/increment weather lodging arranged as necessary. No walk-in registration.
 For increment weather lodging, contact (615)-469-1342 upon airport arrival.

\$ 550.00 \$ 775.00

Evins Mill/ E&G Adjustments:

Indicate arrival time & flight if known. Driving directions available at www.evinsmill.com

Indicate any special needs or dietary requirements.

Total fee: _____

Add fees above & pay this amount.

Payment Terms & Conditions

Payment Schedule & Cancellation Policy:

All payments received by January 5, 2009.
 Cancellation & late fees apply after
 December 19, 2008 as noted above & below.

Note: Rooms held till December 23, 2008.
 Book early to ensure a room is held.

Refund Amount for all Fees:

Before December 19, 2008: 100%, less \$100
 Before December 31, 2008: 50%
 After December 31, 2008: 0%

Payment Method:

Company/personal check enclosed. **\$150 fee for returned checks.**

Credit card:

Name:	Type:
Number:	Expiration:

Payable to:	Evins Mill	Federal Tax ID#: 62-1572629
	Cochran Management Company, L.L.C.	
	2820 Dogwood Place, Suite 102	
	Nashville, TN 37204	Ph: (615) 269-3740
	Email: william@evinsmill.com	Fx: (615) 269-3740 (call prior to fax)

Registration Process:

1. Fax completed and signed registration form to both (615) 269-3740 & (240) 524-8482.
2. Contact Evins Mill to verify registration, & for special dietary needs & accommodation changes.
3. Mail completed forms/payment, to be received by registration deadline, after which late fees apply.

Attendee Application & Acceptance

Please sign & date below:

Company Use Only:

Date Attendee Applicant Signature

E&G Associates, Inc. (E&G) reserves the right to modify course location, venue & accommodations; to decline any course applicant; or to cancel or reschedule course in its entirety due to unforeseen circumstances. In the event of cancellation, participants will be entitled to a full refund of registration fees, with no further obligation on the part of E&G. Final course details & schedule to be provided two weeks prior to course. E&G will invoice for any billing discrepancies. Overflow accommodations arranged as necessary. With above signature, attendee accepts these terms & holds E&G entirely harmless from all liability involving participation at Evins Mill.