



# Design & Optimization of Granulation & Compaction Processes For Enhanced Product Performance

Nashville, TN • January 21-23, 2009

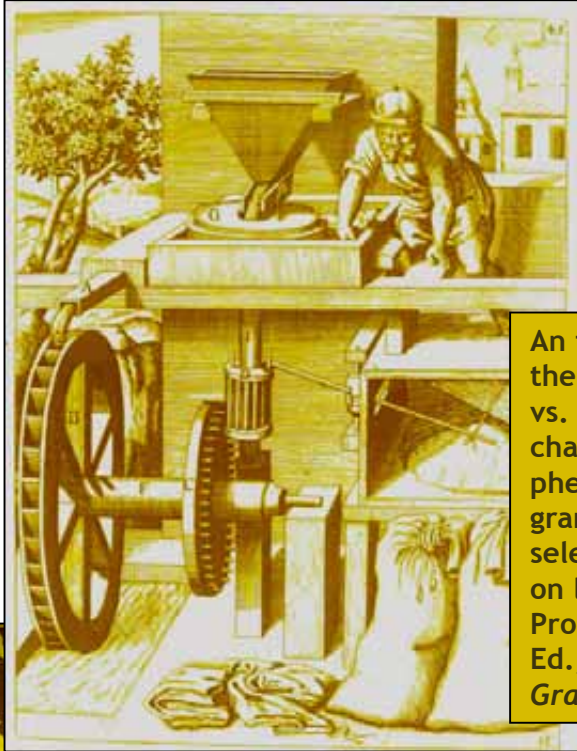
Additional details & courses: [www.powdernotes.com](http://www.powdernotes.com)

Leaders in Particle Processing & Product Development

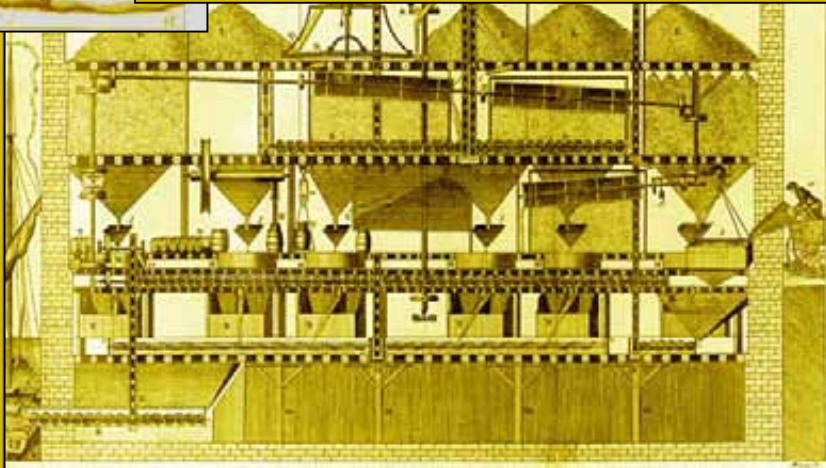
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EVINS MILL



An intensive 3-day size enlargement course covering the principles of agglomeration; impact of formulation vs. process equipment interactions on product quality; characterization techniques and key rate process phenomena; design, scale-up, & operation of various granulation and compaction processes; technology selection, simulation of agglomeration circuits. Based on latest advances (Section 21: Solids Operations & Processing, *Perry's Chemical Engineers' Handbook*, 8th Ed., Ennis et al., 2007; *The Science & Engineering of Granulation Processes*, Ennis & Litster, Kluwer, 2004).



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## Course Venue

An intensive, 3-day size enlargement course conducted by E&G Associates and led by Dr. Bryan Ennis. Course content includes principles of agglomeration; impact of formulation vs. process equipment interactions on product quality; characterization techniques and key rate process phenomena; design, scale-up, & operation of various granulation and compaction processes; technology selection, simulation of agglomeration circuits. Extensive hands-on demonstrations and participant interaction. Training is based on latest advances in agglomeration science (Section 21: Solids Operations & Processing, Perry's Chemical Engineers' Handbook, 8th Ed., Ennis *et al.*, 2007; *The Science & Engineering of Granulation Processes*, Ennis & Litster, Kluwer, 2004).

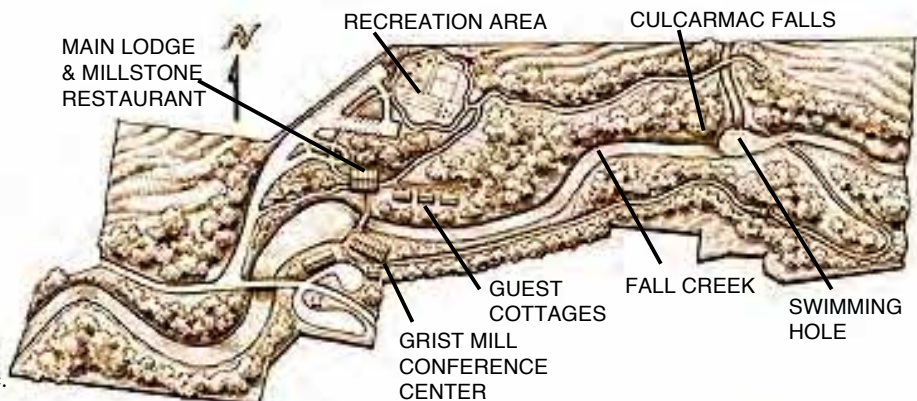
Previous participants: Abbott, Amgen, Albemarle, Alkermes, Astrazeneca, Biovail, Bristol-Myers, Dow, Boehringer-Ingelheim, Cabot, DuPont, Duracell, Lilly, Fauldings, FDA, FMC, Johnson & J, Kodak, Kohler, Merck, Niro, Noveon, Novartis, Novopharm, Pfizer, Novozymes, PCS Phosphate, Pharmacia, Phelps Dodge, P&G, Glatt Air, GSK, Roxane, Schering-Plough, Shire, Searle, Teva, Transform Pharma, Tyco, USP, US Steel, Watson Pharma, Wyeth, Warner Chilcott, & Xerox.

The location for the course is a secluded corporate retreat center on the Cumberland Plateau. Details at: [www.evinsmill.com](http://www.evinsmill.com)

For questions & registration materials, or to arrange an in-house workshop, please contact:  
E&G Associates

Tel: (615) 591-7510 • Fax: (240) 524-8482

[courses@powdernotes.com](mailto:courses@powdernotes.com)



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Reservations: 615.269.3740 • Fax: 615.269.3740 • Mill: 1535 Evins Mill Road, Smithville, TN 37166 • [courses@powdernotes.com](mailto:courses@powdernotes.com)



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## Course Schedule

**Evening arrival:** Check-in 4:00 PM. Reception/Dinner at 6:30/7:30 PM. Introductory Lecture

### Day 1 - Size Enlargement Fundamentals

- 7:00 Breakfast
- 8:00 Morning Session      Controlling Granule Rate Processes, Interaction of Feed Properties & Operating Variables, Characterization Techniques, Wetting & Nuclei Formation, Scale-up of Wetting.
- 12:00 Lunch
- 1:00 Afternoon Session      Agglomerate Growth and Densification, Agglomerated Voidage Control, Scale-up of Growth/Densification, Agglomerate Beakage & Attrition
- 3:00
- 5:30 Dinner
- 7:00 Evening Session      Wrap-up, Powder Flow Characterization, Vendor Presentations & Hands-on Instrument Breakout
- 8:30

### Day 2 - Wet Granulation Processes

- 6:30 Breakfast
- 7:30 Morning Session      Design, Scale-Up & Operation of Wet Granulation Processes: Fluid-Bed, Drum, Pan or Disc, Mixers
- 12:00 Lunch
- 1:00 Afternoon Session      Design, Scale-Up & Operation of Wet Granulation Processes: High Shear Mixers
- 3:00
- 5:30 Dinner
- 7:00 Evening Session      Case Study Discussion, Vendor Presentations & Hands-on Instrument Breakout
- 8:30

### Day 3 - Dry Compaction Processes & Process Scale-Up

- 7:00 Breakfast
- 8:00 Morning Session      Compaction Agglomeration Processes: Roll Presses & Briquetting, Tableting, Extrusion
- 12:00 Lunch
- 1:00 Afternoon Session      Team design session. Granulation and compaction scale-up.
- 3:00      Course Wrap-up

Please note that registration is limited to 15 participants per course date. Course fee may be waived for outstanding university students. Direct such requests for scholarship aid to Dr. Bryan Ennis, [ennis@powdernotes.com](mailto:ennis@powdernotes.com).

**Design & Optimization of  
Size Enlargement Processes**

(EARLY BIRD REG DISCOUNT-10%)  
\$ 1,850/participant + accommodations  
(Register early to ensure room hold.)

For questions & registration materials, or to arrange an in-house workshop, please contact:  
E&G Associates • Tel: (615) 591-7510 • Fax: (240) 524-8482 • [courses@powdernotes.com](mailto:courses@powdernotes.com)

**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.

\$ 1,450.00

\$ 1,850.00

Payment received after January 5, 2009.

**Add \$100:**

Book by December 23, 2008 to ensure room hold.

**Discounts:** EARLY BIRD: Received by December 8, 2008.

**Less 10% (\$145 or \$185):**

**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/inclement weather lodging arranged as necessary. No walk-in registration.

For inclement weather lodging, contact (615)-469-1342 upon airport arrival.

**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.