

## This CMI course is specifically designed to help you:

- Acquire an understanding of sand and it's relationship to mold & coremaking
- Examine oil sand mold & coremaking
- Study the shell process
- Develop an understanding of the nobake chemically bonded sand processes
- Consider all the aspects of the coldbox systems
- Learn about the hotbox processes
- Acquire an understanding of when and how to apply washes & coatings
- Investigate the causes of chemical binder-related casting defects

## Who Should Attend:

Trainees, coreroom & molding personnel who work with the chemical binder processes, quality control personnel, foremen, supervisors and other production-oriented staff who would benefit from an understanding of chemical binder, mold & coremaking.

## Instructors:

Instructors for CMI classes consist of technical and management experts from throughout the industry, working in concert with AFS/CMI staff professionals at the headquarters in Schaumburg, IL. Instructors for this class include individual consultants as well as representatives from HA International LLC and Ashland Casting Solutions.



The Cast Metals Institute has been reviewed and approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 8405 Greensboro Drive, Suite 800, McLean, VA 22102.



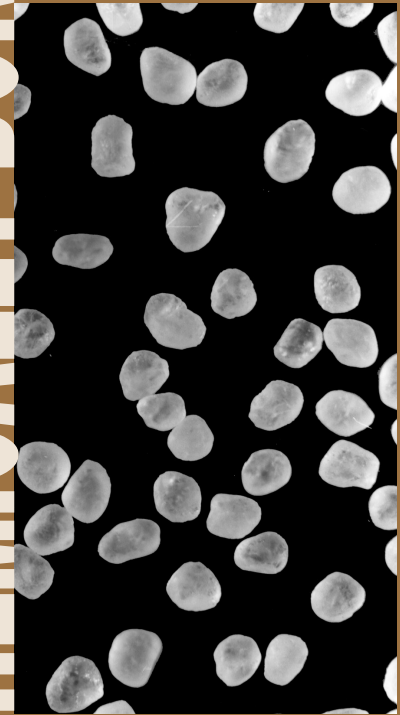
**Cast Metals Institute, Inc.**  
1695 N. Penny Lane  
Schaumburg, IL 60173-4555  
[www.castmetals.com](http://www.castmetals.com)

NON-PROFIT ORG.  
U.S. POSTAGE PAID  
SCHAUMBURG, IL  
PERMIT NO. 82

Return Service Requested

# CHEMICALLY BONDED

## mold & coremaking materials & methods



Co-Sponsored by the AFS  
Piedmont Chapter

**August 18-20, 2009**  
**Hampton Inn & Suites-**  
**Charlotte Airport**  
**Charlotte, NC**



CAST METALS INSTITUTE, INC.

**The First Name In  
Foundry Education!**

# CHEMICALLY BONDED

## mold & coremaking materials & methods

August 18-20, 2009  
Hampton Inn & Suites  
Charlotte, NC

### Tuesday, August 18

8:15 a.m.–3:30 p.m.

#### REGISTRATION & ORIENTATION

##### SAND

*Types of Aggregates*

*Grain Size*

*Impurities*

*Temperature*

*Moisture*

*Segregation*

##### SHELL PROCESS

*Materials & Control*

*Sand & Resins*

*Coating Methods*

*Shell Core Methods & Equipment*

*Shell Related Defects*

##### LUNCH

##### SHELL PROCESS (cont'd)

### Wednesday, August 19

8:30 a.m.–4:00 p.m.

#### NOBAKE BINDER SYSTEMS

*Organic Systems*

*Inorganic Systems*

*Quality Control/Process Control*

*Nobake Related Defects*

#### LUNCH

#### HOTBOX & WARMBOX BINDER SYSTEMS

*Binder Systems*

*Production Methods & Equipment*

*Hotbox & Warmbox Related Defects*

#### COLDBOX BINDER SYSTEMS & THEIR APPLICATION

*Binder Systems*

*SO<sub>2</sub> Systems*

*CO<sub>2</sub> Systems*

*Phenolic Urethane*

*Ester Cured Phenolic*

*Production Methods & Equipment*

*Coldbox Related Defects*

### Thursday, August 20

8:30 a.m.–12:00 p.m.

#### CORE & MOLD COATINGS

*Types of Coatings*

*Application Methods*

*Storage, Handling & Shelf Life*

*Applications & Limitations*

*Testing*

*Permeability, Viscosity, pH, Density*

*Percent Solids, Specific Gravity, Baumé*

#### SAFETY & HANDLING

*Chemical Binders*

*Coatings*

#### CORE-RELATED DEFECTS

#### EVALUATION & COURSE CONCLUSION

For more information, or to register on the web,  
visit us at [www.castmetals.com](http://www.castmetals.com)

**Course Hours** The course is conducted from 8:15 a.m. to 3:30 p.m. on the first day and from 8:30 a.m. to 4:00 p.m. the second day. The third day runs from 8:30 a.m. to 12:00 noon.

**Registration Fee and Discounts** The registration fee is \$835 for AFS members and \$935 for non-members. Fee covers all course materials, luncheons and coffee breaks. (Payable in U.S. dollars or equivalent.) Fee covers all course materials, luncheons and coffee breaks. (Payable in U.S. dollars or equivalent.)

**Tax Deduction of Expenses** An income tax deduction is allowed for expenses of education (including registration fee, travel, meals and lodging) undertaken to maintain and improve professional skills. (See U.S. Treas. Regulation 1.162-5.)

**Cancellations and Substitutions** Substitute students will be accepted any-time. However, cancellations of confirmed registrants with full refund of course fees cannot be accepted unless received one week prior to course date. After that time, a \$25 penalty will be assessed. *In the unlikely event a course is cancelled for any reason, CMI liability is limited to the return of the registration fee.*

**Continuing Education** CMI will award 1.7 CEU to each participant who successfully completes this program. The CEU (Continuing Education Unit) is a nationally recognized unit of measure for continuing education and training programs that meet certain criteria. CMI students will receive CEU upon successful completion of the course. Certificates of completion will be issued to each student awarded CEU. A permanent record of each individual's completion will remain on file with copies issued to each participant upon request.

**Housing:** Registrants should make their hotel reservations directly with the Hampton Inn & Suites Charlotte Airport, 2731 Little Rock Road, Charlotte, NC 28262. Telephone: 704/394-6455. The Hampton Inn offers a discounted room rate of \$99.99/night for our attendees. You must identify your affiliation with CMI to receive the discounted rate.

#### CAST METALS INSTITUTE, INC.

1695 N. Penny Lane, Schaumburg, IL 60173-4555

All fees payable in U.S. dollars or equivalent.

Remit payment to: 35169 Eagle Way, Chicago, IL 60678-1351

Check Enclosed

For Credit Cards:

To register toll free, call 800/537-4237 or 847/824-0181. FAX: 847/824-2174

The following information is required in order to charge

American Express  MasterCard  VISA

Account Number \_\_\_\_\_

Exp. Date \_\_\_\_\_

Authorized Signature \_\_\_\_\_

Qty.	Reg #	Title	Price
	06-10	Chemically Bonded Mold & Coremaking Materials & Methods—Member	\$835
	06-10	Chemically Bonded Mold & Coremaking Materials & Methods—Non-member	\$935
Total			

**COURSE NO. 4-181** ▾ August 18-20, 2009  
**Chemically Bonded Mold & Coremaking Materials & Methods (06-10)**  
**Member: \$835** ▾ **Non-member: \$935**  
**Hampton Inn & Suites** ▾ **Charlotte, NC**

Name \_\_\_\_\_

Title \_\_\_\_\_

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Telephone \_\_\_\_\_

FAX/E-mail \_\_\_\_\_