

REGISTRATION

Hands-on Short Course on Design and Operation of Gasification Technologies

Date: Flexible

(Please Type or Print Clearly) Name: \_\_\_\_\_

This name will appear on your certificate of Training

Title: \_\_\_\_\_

Company: \_\_\_\_\_ Mailing

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip

Code: \_\_\_\_\_ Country: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ E-

mail: \_\_\_\_\_

Name Card (you would like to be called): \_\_\_\_\_

Name and phone number to contact in case of emergency: \_\_\_\_\_

The registration fee per person is US \$1,500. Participants must inform BETA Lab of preferred exact dates of training program. Applications are accepted under the terms described in the accompanying short course program or a revised program agreed upon by participant and BETA Lab. Payment by check drawn on a U.S. bank or an International cashier's check in U.S. dollars must accompany applications.

Method of Payment (mark one)

Checks payable to Texas A&M AgrLife Research.

If paying with credit card please include type of card:

American Express      Visa      Master Card      Diners Club

Card Number: \_\_\_\_\_

Name of Card Holder: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Total Amount: \$ \_\_\_\_\_

Mail or fax this application to:

Cheryl Yeager  
Business Coordinator  
Biological and Agricultural Engineering Department (BAEN)  
Texas A&M University  
College Station, Texas 77843-2476 U.S.A.  
Tel: 979-845-3994; Fax: 979-845-3936  
E-mail: business@baen.tamu.edu

## Hands-on Short Course on the Design and Operation of Gasification Technologies (1 Week)

Prepared and Organized by the BioEnergy Testing and Analysis Lab (BETA Lab)  
Biological and Agricultural Engineering Department  
College of Agriculture and Life Sciences (COALS)  
Texas A&M University  
College Station, TX 77843-2476 U.S.A.

### Training Pedagogy

This training program is a combination of Lectures and Computational Exercises in the morning and actual hands-on exercises in the afternoon. Each training lecture is loaded with engineering calculations and the design of gasifiers. At the end of the training program, the trainee will have learned all basic skills in becoming a skilled operator of a gasifier or process engineer. The trainee will also receive a hardcopy of complete set of training materials.

### Schedule of Lectures/Computations and Lab Activities

#### Sunday or Day 0, Arrival of Trainee

#### Monday or Day 1

##### Morning Activities

Tour of Lab Facilities of Overview of Training Program

Lecture 1: Overview of Gasification Process and Products Produced

Lecture 2: Feedstock for Making Synthesis Gas

Computation 1: Computations and Yield Prediction and Sizing of Plants

##### Afternoon Activities

Lab 1: Biomass Analysis Exercises in Preparation for Thermal Conversion (HV, Proximate and Ultimate)

#### Tuesday or Day 2

##### Morning Activities

Lecture 3: Equipment and Instruments Required for Gasification Processes

Lecture 4: Design of Fixed Bed and Fluidized bed Gasifiers

Computation 2: Calculations of exposure time for biomass in various types of gasifiers and A/F Ratios

##### Afternoon Activities

Lab 2: Measurements of syngas in a gas chromatograph

#### Wednesday or Day 3

##### Morning Activities

Lecture 5: The Fluidization Technology: Design of Fluidized Bed Gasifiers

Lecture 6: Advanced Gasification Technologies

Computation 3: Fluidization Calculations

##### Afternoon Activities

Lab 3: Operation of Fluidized Bed Gasifier

Thursday or Day 4

Morning Activities

Lecture 7: Equipment and Technology for Syngas Production and Upgrade

Lecture 8: Power Production from Synthesis Gas

Computation 4 Equipment Design and Control Systems Introduction

Afternoon Activities

Lab 4: The Fluidized Bed Gasification Control Systems

Friday or Day 5

Morning Activities

Lecture 9: Strategies for the Establishment of Small and Medium-Scale Gasifiers

Lecture 10: Design of Commercial Gasification Systems and Economics of Heat and Power Production

Computation 5: Development of Business Plan and Simple Economic Calculations and Projections

Afternoon Activities

Lab 5: Eutectic Point of Biomass: Theory and Measurements

Saturday or Day 6

Field Visit and Tour:

- a. Visit a Commercial Biofuel Facility (Dayton, Texas)
- b. Awarding of Certificates

### Summary of Training

Time	Day of the Week						
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
AM	Arrival of Trainee	Tour/Lect 1	Lecture 3	Lecture 5	Lecture 7	Lecture 9	Tour of
		Lecture 2	Lecture 4	Lecture 6	Lecture 8	Lect 10	Commercial
		Comp 1	Comp 2	Comp 3	Comp 4	Comp 5	Facility
		Lunch Break					
PM		Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Awarding
		Biomass	Product	Fluidized	Control	Eutectic	and Trainee
		Analysis	Analysis	Beds	Systems	Points	Departure

For additional technical information, write, call, fax or e-mail to:

Dr. Sergio C. Capareda

Head, BioEnergy Testing and Analysis Lab

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College of Agriculture and Life Sciences (COALS)

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