

# Comprehensive 3-Day Training Course Covering Nonwoven Technologies & Markets



## Nonwovens Course

February 21-23, 2012

July 24-26, 2012

### Topics Include:

- Raw Material for Nonwovens
- Web Forming Technologies
- Web Bonding Technologies
- Web Conversion & Finishing Technologies
- INDA & EDANA Test Methods
- Nonwoven Products and Applications
- Environmental Issues
- Nonwoven Markets & Future Directions



### Instructor:

*Edward A. Vaughn  
Professor Emeritus,  
Clemson University*



### Complimentary Publications:

- Airlaid Primer
- Fabric Sampler
- Filtration Handbook
- Glossary of Terms
- Hydroentangling Primer
- Nonwovens Handbook
- “Nonwovens! What are They?” (DVD)
- Spunbond Handbook



## Day 1

9:00 am **Program Preview:**  
Video overview, nonwoven markets and product applications, information sources and definitions of nonwovens.

**The World of Nonwovens:**  
“Hands-on” examination of nonwoven fabric and end-use product samples as a means to illustrate the wide range of nonwoven usage. Establishment of “Analysis Teams and Tasks.”



12:00 pm **LUNCH**

1:00 pm **Nonwovens Technology Primer:**  
Definitions of nonwovens, short history of the technical evolution of the industry. Description of basic nonwoven manufacturing principles and systems.

5:00 pm **Reception and “Analysis Team Bonding”**

6:00 pm **Adjournment**



## Day 2

8:00 am **Fiber Fundamentals:**  
Generic types and characteristics, property comparisons, raw material-fabric property relationships.

**Web Forming Technologies—Drylaid Nonwovens:**  
Analysis of carding and staple fiber airlaid systems. Review of background, process technologies and recent developments.

**Web Forming Technologies—Wetlaid and Short Fiber Airlaid Nonwovens:**  
Development of wetlaid nonwovens based on paper technology. Unique characteristics of cellulose fibers in wetlaid technology. Development of short fiber airlaid nonwovens and comparison of short fiber airlaid nonwovens technology with wetlaid nonwovens technology.

12:15 pm **LUNCH**

## Day 2 (cont.)

1:00 pm **Web Forming & Bonding Technologies—“Polymer to Fabric” Nonwovens:**  
Basic principles associated with spunlaid, meltblown and film-based nonwovens and the polymers used in their production.

**Web Bonding Technologies I:**  
Mechanical bonding principles and systems.

**Analysis Team Work and Discussion Session**

5:00 pm **Adjournment (evening on your own)**



## Day 3

8:00 am **Web Bonding Technologies II:**  
Chemical and thermal bonding principles and systems.

**Nonwoven Fabric Finishing:**

Principles, processes, and methods used to treat nonwoven fabrics to obtain enhanced physical and aesthetic properties for specific end-use.

**Presentation of “Analysis Teams” Findings**

12:00 pm **LUNCH**

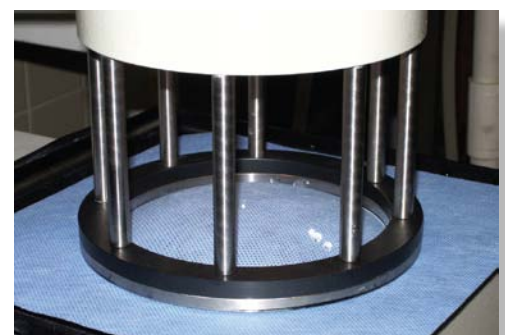
1:00 pm **Nonwoven Fabric Test Methods and Procedures:**  
Overview of nonwoven test methods and standardization of test procedures.

**Future Directions:**

Projection of future applications and developments in manufacturing materials, processes, and products.

**Nonwoven Markets:**

An overview of markets where nonwoven fabric materials are used, market sizes, and projected growth.



4:00 pm **Adjournment—Please exchange a completed evaluation form for your certificate**



# Nonwovens Course

Please complete and fax to:  
919.233.1282

## Hotel Information

### La Quinta Inn & Suites Cary

191 Crescent Commons, Cary, NC 27518  
Phone: (919) 851-2850 or (800) 753-3757  
Rates are \$79/night for King or Double room. Use  
INDA corporate code "INDA10." The hotel is  
approximately a half mile from the INDA office.  
Nearby shopping center has several restaurants.

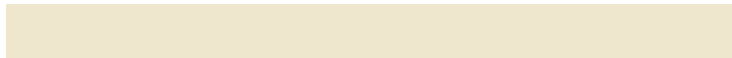
#### Reservation Link:

[http://www.lq.com/lq/properties/cobrand.jsp?cobrand=INDA10\\_966](http://www.lq.com/lq/properties/cobrand.jsp?cobrand=INDA10_966)

### Courtyard by Marriott Cary

102 Edinburgh Drive South, Cary, NC 27518  
Phone: (919) 481-9666 or (800) 321-2211  
Rates are \$114/night for King or Double room. Use  
INDA corporate code "I9F." The hotel is  
approximately one mile from the INDA office and  
the shopping center has several restaurants.

*INDA cannot guarantee room availability. Rental car is recommended—taxi fare one way from RDU to INDA is approximately \$30.*



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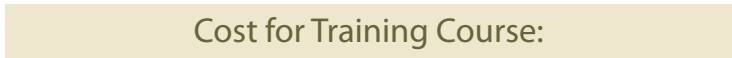
Name \_\_\_\_\_ Title \_\_\_\_\_

Company \_\_\_\_\_ Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip/Postal Code \_\_\_\_\_ Country \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ E-mail \_\_\_\_\_

E-mail Preference  HTML  Text

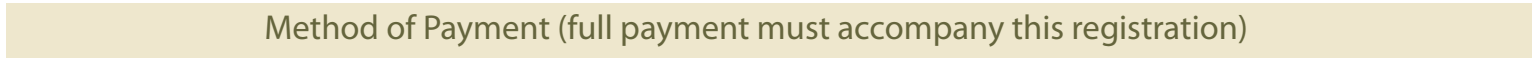


Cost for Training Course:

\$1,995 (INDA MEMBER)

\$2,795 (NON-MEMBER)

Check here if you have a disability that requires special assistance or accommodation to fully participate. Attach a written description of needs. INDA must receive all special assistance requests two weeks before training courses in order to accommodate.



## Method of Payment (full payment must accompany this registration)

MasterCard  VISA  AMEX  Check / Money Order (in U.S. funds drawn on U.S. bank, payable to INDA)

Wire Transfer (for instructions, contact Tracie Leatham, [tleatham@inda.org](mailto:tleatham@inda.org), or call 919-233-1210 ext. 126. Please reference INDA Nonwovens Course and attach confirmation)

Total Enclosed \$ \_\_\_\_\_ Card # \_\_\_\_\_ Card Expires: Month \_\_\_\_\_ Year \_\_\_\_\_ CVC \_\_\_\_\_

Signature \_\_\_\_\_

Cancellations must be in writing and received by INDA 3 weeks prior to course for refund.

To pre-register, mail/fax this form and payment or credit card information to: