

Short Course
 on
**Nanotechnology: Fundamentals, Applications, and Regulations in the
Food Industry**

Dept. of Food, Bioprocessing and Nutrition Sciences
North Carolina State University
Raleigh, NC

May 10, 2010

<u>Time</u>	<u>Activity</u>	<u>Speaker</u>
7:30 to 8:00	<i>Registration and continental breakfast</i>	--
8:00 to 8:15	Welcome and introductions	Sandeep
8:15 to 9:00	Fundamentals of nanotechnology	Kumar & Sandeep
9:00 to 9:30	Applications of nanotechnology in different fields	Sandeep
9:30 to 10:00	Preparation of nanocomposites	Alavi
10:00 to 10:15	<i>Break</i>	--
10:15 to 11:00	Analytical techniques to characterize nanoscale interactions	Kumar
11:00 to 12:00	Determination of physical, mechanical, thermal, rheological, and barrier properties of nanocomposites: Experimental and modeling techniques	Sandeep & Alavi
12:00 to 1:00	<i>Lunch</i>	--
1:00 to 1:30	Applications of nanotechnology in food ingredients and improving food quality	Sabliov
1:30 to 2:00	Applications of nanotechnology in food processing and food safety	Sandeep
2:00 to 3:00	Applications of nanotechnology in food packaging	Kumar & Alavi
3:00 to 3:15	<i>Break</i>	--
3:15 to 4:00	Opportunities, issues, challenges, and resources associated with nanotechnology	Sandeep
4:00 to 4:45	Regulatory and safety aspects associated with nanotechnology	Baughan
4:45 to 5:00	Concluding remarks	Sandeep

Note: Under extenuating circumstances, we may have to make substitutions for speakers

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REGISTRATION FORM

Name: _____

Address: _____

Phone: _____

E-Mail: _____

Registration fees

	<u>By Feb. 10, 2010</u>	<u>After Feb. 10, 2010</u>
Regular	\$800	\$1000
Government	\$600	\$800
Academia	\$400	\$600

NO REFUNDS on cancellations after Feb. 10, 2010.

Please mail the registration form and payment to:

Dr. K.P. Sandeep
 129 Schaub Hall
 Dept. of Food, Bioprocessing and Nutrition Sciences
 North Carolina State University
 Raleigh, NC 27695

Checks should be made payable to "North Carolina State University"

For further information, please contact:

Dr. K.P. Sandeep
 kp_sandeep@ncsu.edu
 919-515-2957

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Information regarding the short course

This short course is intended for anyone who would like to understand the fundamental and application aspects of nanotechnology. It will begin with the fundamentals of nanotechnology, methods to prepare nanomaterials & nanocomposites and a description of the techniques (scanning electron microscopy, transmission electron microscopy, and x-ray diffraction) to characterize interactions at nanoscale. Experimental and modeling techniques to determine physical (size), mechanical (tensile strength, elongation), thermal (glass transition temperature), rheological (storage & loss modulus), and barrier (water vapor, oxygen, and carbon dioxide) properties of importance to nanocomposites will be discussed. Applications of nanotechnology in various fields (material engineering, product development, drug delivery etc) will also be discussed. This will be followed by applications of nanotechnology in food ingredient technology, processing, safety, quality, and packaging. There will also be opportunities to see the results of the work performed through the Center for Advanced Processing and Packaging Studies (CAPPS) – <http://fst.osu.edu/capps> during the short course. The short course will conclude with an insight into the regulatory and safety aspects associated with nanotechnology.

Location

The short course will be held at the [Department of Food, Bioprocessing and Nutrition Sciences](http://www.ncsu.edu/foodscience) – <http://www.ncsu.edu/foodscience> (Schaub Hall) at North Carolina State University. The address is: 400 Dan Allen Dr., Raleigh, NC 27607.

The closest airport is the Raleigh-Durham Airport (RDU). It is approximately 13 miles away. For directions from the airport, click on the link below:

<http://www.mapquest.com/maps/RDU:US/Sullivan+Dr+%26+Dan+Allen+Dr+Raleigh+NC+27607>

Accommodation

Some of the hotels near the meeting location are:

1. Sheraton (421 S. Salisbury St., Raleigh, NC 27601): 919-834-9900
(3 miles away)
2. Raleigh Marriott City Center (434 Fayetteville St. Mall, Raleigh, NC 27601): 919-833-1120
(3 miles away)
3. Clarion Hotel (320 Hillsborough St., Raleigh, NC 27603): 919-832-0501
(2.5 miles away)
4. Ramada Inn (1520 Blue Ridge Rd., Raleigh, NC 27607): 919-832-4100
(3 miles away)
5. Holiday Inn Brownstone Hotel (1707 Hillsborough St., Raleigh, NC 27605): 919-828-0811
(1.5 miles away)
6. Courtyard by Marriott (3908 Arrow Dr., Raleigh, NC 27612): 919-782-6868
(6 miles away)
7. Marriott Crabtree (4500 Marriott Dr., Raleigh, NC 27612): 919-781-7000
(6.5 miles away)