

## Sustainable Nanomaterials Workshop - Tuesday June 26, 2012

### Overall Purpose

- To gather input from stakeholders in industry and academia on the current state of the art for Sustainable Nanomaterials, the vision for the future of this emerging technology, as well as manufacturing challenges and opportunities.

### Session Purposes

- To evaluate the status and prospects for nanomaterial manufacture from sustainable resources.
- To quantify supply and demand in current markets and possible future scenarios
- To identify the key technologies and critical challenges in producing nanomaterials from various sources for today's markets and for large-scale central and distributed production from renewable sources
- To prioritize research and development needs to advance nanomaterials from renewable sources
- To strategize on how best to leverage R&D efforts in sustainable nanomaterials production among various government agencies
- To introduce the Forest Products manufacturing community to the U.S. DOE Advanced Manufacturing Office (AMO) program vision, its goals and initiatives.
- To encourage discussion and networking among leaders in the field
- To identify sustainable nanomaterial production from forest products as a potential for effective and efficient utilization of renewable and sustainable resources as substitutes for petroleum-derived materials.
- To understand the potential applications of sustainable nanomaterials to energy technologies.

### Non-Purpose

- To reach 100% consensus or identify the solutions to problems that are identified.
- To discuss specific budget formulation activities, procurement-sensitive or proprietary activities
- To reorganize EERE or the Advanced Manufacturing Office, its Goals, or discuss other non-germane issues.

### Background

- AMO has a number of Advanced Manufacturing initiatives, such as Manufacturing Demonstration Facilities (MDFs) which are designed to provide the manufacturing community affordable access to advanced physical and virtual tools for rapidly demonstrating new manufacturing technologies and optimizing critical processes.
- Feedback from the workshop will assist AMO in strategic planning for future activities.

### Facilitation Ground Rules

- No Speeches
- Listen to Each Other
- Suspend Judgment
- Spin/Churn Thoughts into Rich Ideas
- Merge Ideas to Create Strength
- Narrow to a Manageable Few
- Focus on Unique Factors
- Challenge Ideas, not People

---

### Agenda

<b>8:00am-9:00am</b>	<b>Registration and Breakfast</b>	
<b>9:00am-9:05am</b>	<b>Welcome and Introductory Remarks</b>	<b>Dr. Bhima Sastri</b>
<b>9:05am- 9:30am</b>	<b>Advanced Manufacturing Office Overview</b>	<b>Dr. Leo Christodoulou</b>
<b>9:30am-10:30am</b>	<b>Near-Term Technology Opportunities and Challenges</b>	<b>Expert Panel</b>
		<b>Facilitated by Dr. Bhima Sastri</b>

#### Purpose:

- To exchange information on sustainable nanomaterials initiatives; to encourage discussion and networking among leaders in the field.
- To provide a broad spectrum of opportunities and challenges in the near term for nanomaterial production from renewable sources
- To introduce the Forest Products manufacturing community to the Advanced Manufacturing Office program vision, its goals and initiatives.

## Sustainable Nanomaterials Workshop - Tuesday June 26, 2012

<b>10:30am-10:40am</b>	<b>Facilitation Instructions</b>	<b>Bryan Pai and Lee-Ann Tracy</b>
<b>10:40am-10:45am</b>	<b>Break</b>	
<b>10:45am-12:00pm</b>	<b>Breakout Session: Short Term Focus</b>	<b>Two concurrent sessions</b>
	<ul style="list-style-type: none"> <li>○ To identify the short-term manufacturing challenges and identify a path covering the next 5 years.</li> <li>○ To enable and support development and demonstration of new, energy-efficient and flexible manufacturing technologies.</li> <li>○ To identify a group reporter           <ul style="list-style-type: none"> <li>▪ What are the challenges/needs?               <ul style="list-style-type: none"> <li>● Which ones are clearly defined?</li> <li>● Which ones need more definition?</li> </ul> </li> <li>▪ What can be done to address the gaps (synergies?)</li> <li>▪ What areas will it impact: Industry; Communications – What are the potential applications?</li> <li>▪ What are the top three opportunities for nanomaterials applications that are good and will impact in the near term (&lt;5yr)?</li> <li>▪ Recommendations to DOE/AMO/Other Agencies?</li> </ul> </li> </ul>	
<b>12:00pm-1:00pm</b>	<b>Lunch and Networking Session</b>	
<b>1:00pm-2:00pm</b>	<b>Long-Term Technology Opportunities and Challenges</b>	<b>Expert Panel</b>
		<b>Facilitated by Dr. Bhima Sastri</b>
	<ul style="list-style-type: none"> <li>● To give an overview and major embodiments of nanomaterials production technologies.</li> <li>● To review the status and prospects for nanomaterial manufacture from sustainable resources.</li> <li>● To quantify supply and demand in current markets and possible future scenarios</li> </ul>	
<b>2:00pm-2:15pm</b>	<b>Break</b>	
<b>2:15pm-3:30pm</b>	<b>Breakout Session: Long-Term Focus</b>	<b>Two concurrent sessions</b>
	<ul style="list-style-type: none"> <li>▪ What are the challenges/needs?</li> <li>▪ What are the top three opportunities for nanomaterials applications that are good and will impact in the long term (&gt;5yr)?</li> <li>▪ Do/Should we change anything we heard during the morning breakout?</li> <li>▪ Understanding of the relation the above activities, discuss potential overlap or gaps           <ul style="list-style-type: none"> <li>● Key immediate next steps and timeframe?               <ul style="list-style-type: none"> <li>○ EERE, Industry, or Other Agency Actions</li> </ul> </li> <li>● Who else should know about the outcomes of this meeting?</li> </ul> </li> </ul>	
<b>3:35pm-3:40pm</b>	<b>Break</b>	
<b>3:40pm-4:00pm</b>	<b>Breakout Session Report Out &amp; Closing Remarks</b>	<b>Dr. Sastri &amp; Dr. Christodoulou</b>
<b>4:00pm</b>	<b>Adjourn</b>	