PLASTICS & COMPOSITES

THE FUTURE OF AUTOMOTIVE

Sandra McClelland
Automotive Chair, American Chemistry Council Plastics Division
Business Development, Solvay Specialty Polymers

April 24, 2017
Plastics:

- Creating New Material Technologies
- Enabling Future Automotive Innovations
- Sustainable Solutions

https://www.youtube.com/embed/B6RyBH51VQ?rel=0
Advanced Plastics

Weight savings, parts consolidation

Improved safety, protecting occupants in crashes

Unique and flexible vehicle designs
VISION:

By 2030, the automotive industry and society will recognize plastics and polymer composites as preferred material solutions.
Roadmap Priority Actions

1. Technology Development Center
2. Generic Cost Models
3. Material Properties Database
4. Design Guidelines
5. Material and Component Models
6. High-Speed Manufacturing Center
7. Joining Techniques
8. Engineered Materials with Improved Properties
9. Education and Training
Technology Solutions

**Needs:**
- Pre-competitive tech center

**Solutions:**
- Institute for Advanced Composites Manufacturing Innovation (IACMI)
  - Technology, Tooling and Training
Needs:
- Advance High Speed Manufacturing
- Reduce / Eliminate Retooling

Solutions:
- IACMI
- Fiber Orientation Detection Tool - ORNL
- Design Without Retooling
- 3D Printing for Tooling
Education and Training

Needs:
• Training classes
• Degree programs at universities

Solutions:
• CCS
• Kettering
• New degree programs
• Benchmarking globally, e.g. BMW

Lightweight seating foam. Courtesy of BASF
The Future Is Now: Electric Powertrains
48.7 mpg

Carbon fiber demand to reach $28 billion by 2024

The Future Is Now: 3-D Printing
The Future Is Now: Autonomous Vehicles
Thank you!

Learn More at www.plastics-car.com