



# Bio-based Materials in Sports

20th April 2010

Centre for Sports and Exercise  
Science, University of Essex,  
Colchester

# House keeping

**Fire Safety**

**Facilities**

**Time keeping**

# Welcome and Introduction

**Dr Liliya Serazetdinova**  
**Business Innovation Manager**  
**InCrops Project**

**Leading on biopolymers, plastic packaging, textiles for furnishings, fashion and design, natural pigments and eco-paints**

**Tel: 07776301718**

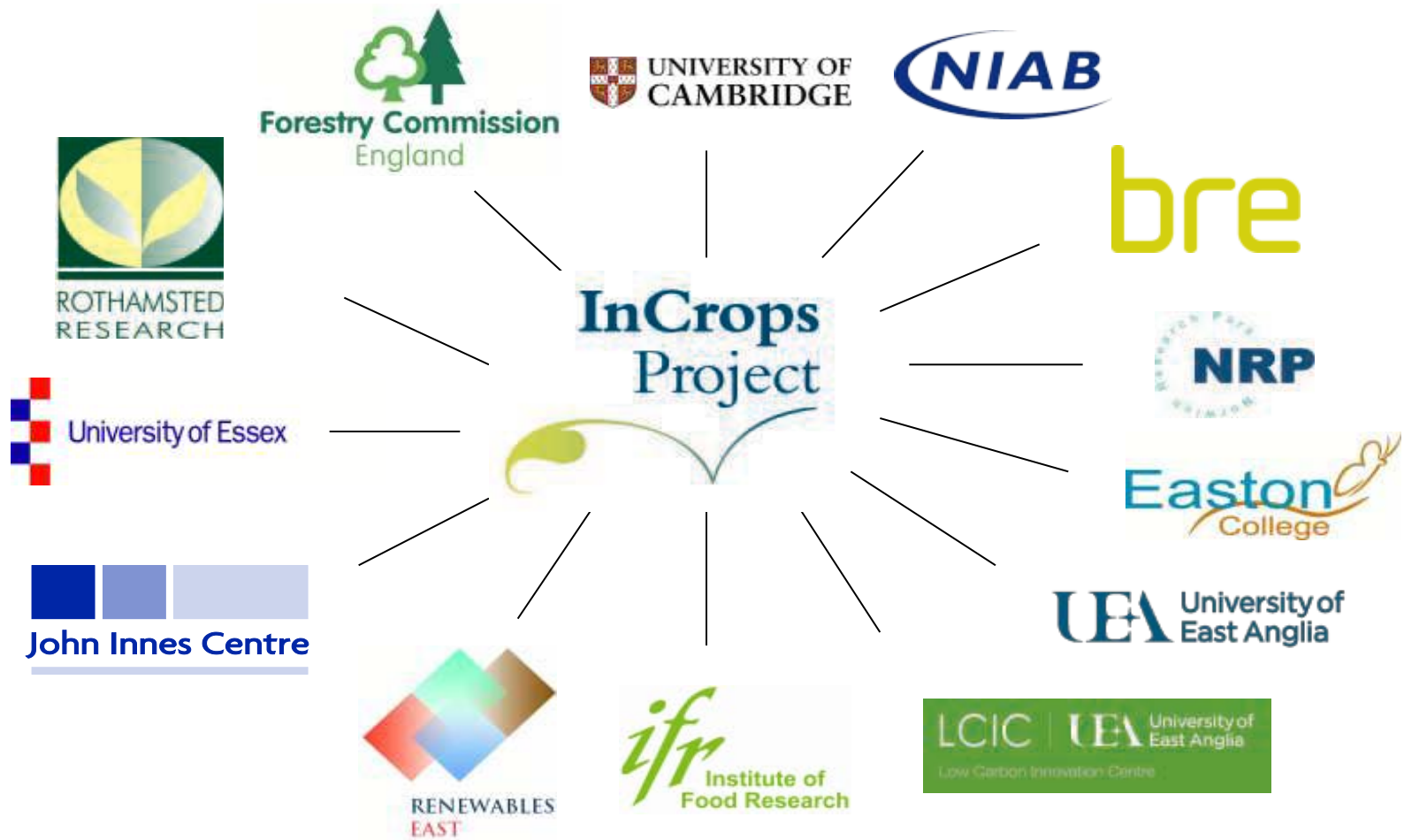
**Email: [l.serazetdinova@incropsproject.ac.uk](mailto:l.serazetdinova@incropsproject.ac.uk)**

# What is the InCrops Project?

- Initiative to promote low carbon solutions based on alternative crops
- Focus on East of England (funded by EEDA / ERDF)



# Partnership at the core



# Why InCrops had organised this event

- InCrops has expertise in natural fibres, biopolymers, biocomposites, functional foods and nutraceuticals
- Sport sector is an early adopter of new materials
- Emerging drivers for green materials in sport
- London 2012 Sustainability Plan
- Significant commercial opportunities for companies supplying sports clothing, equipment, and functional food based on renewables

# Delegate pack

Further information about InCrops and University of Essex

Programme

Speaker profiles

Evaluation form



# Programme of the event

- 2:40 Rachel Hammond, **RAW Bamboo Bikes** *'Bamboo bikes and sports clothing'*
- 3:00 Dr Dominic Micklewright, **University of Essex**, *'Bamboo vs. Cotton Tee-Shirts: A Pilot Study'*  
Lawrence Mallinson, **James White Drinks Ltd**, *"Beetroot juice and the power of NO"*.
- 3:20 Refreshments and tour
- 4:00 Duncan Howbrook, **Ultrapolymers UK**, *'The use of renewable polymers in sports applications'*
- 4:20 Dr Sally Beken, **Materials KTN**, *'The MaterialsKTN; supporting Biocomposites'*
- 4:30 Craig Allen, **Arkema Group**, *'Arkema Group: renewable polymers in sports applications'*
- 4.50 Closing remarks - Dr Liliya Serazetdinova
- 5:00 Networking and refreshments
- 5:30 Close

# Tour of the facilities and equipment

**Dr Dominic Micklewright, University of Essex,  
Centre for Sports and Exercise Science**

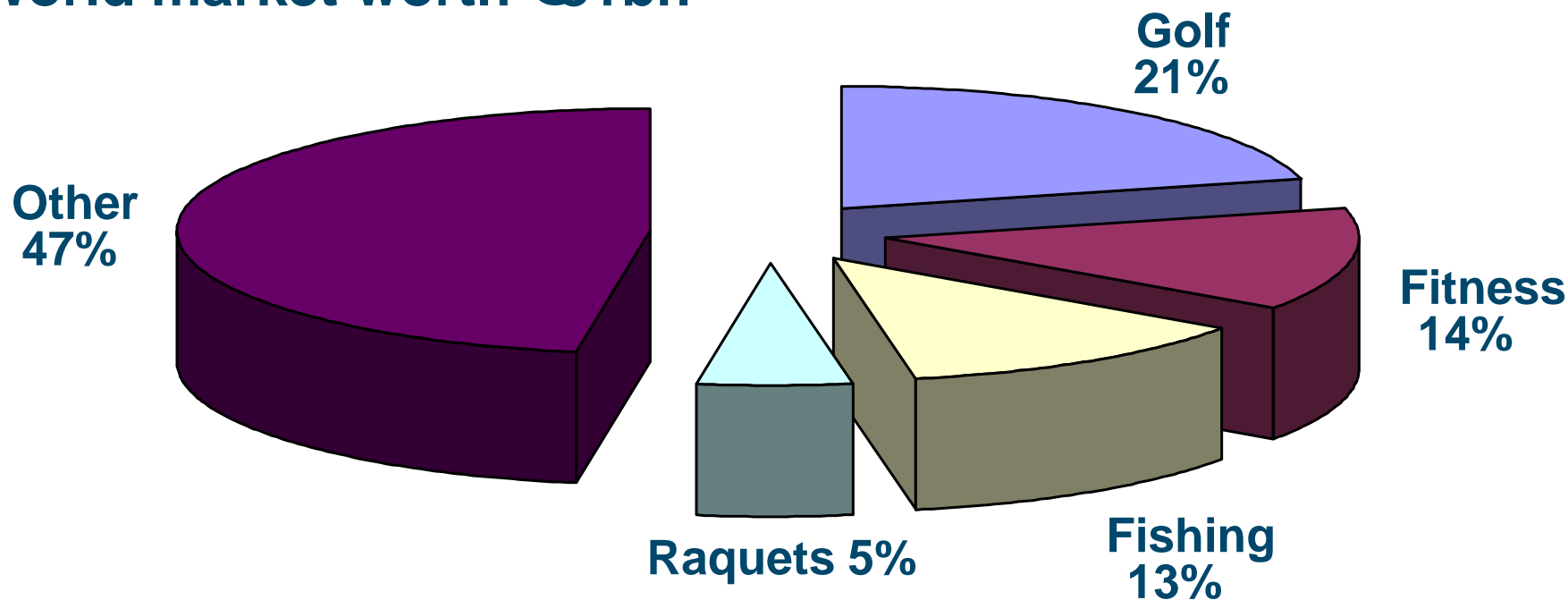
**Two groups - split according to coloured stickers on your badges**

**Group 1: green sticker – start at 15:20**

**Group 2: red sticker – start at 15:40**

# Sports equipment as market entry for innovative materials

Reasons: early adopter of new materials, high value products.  
World market worth €81bn

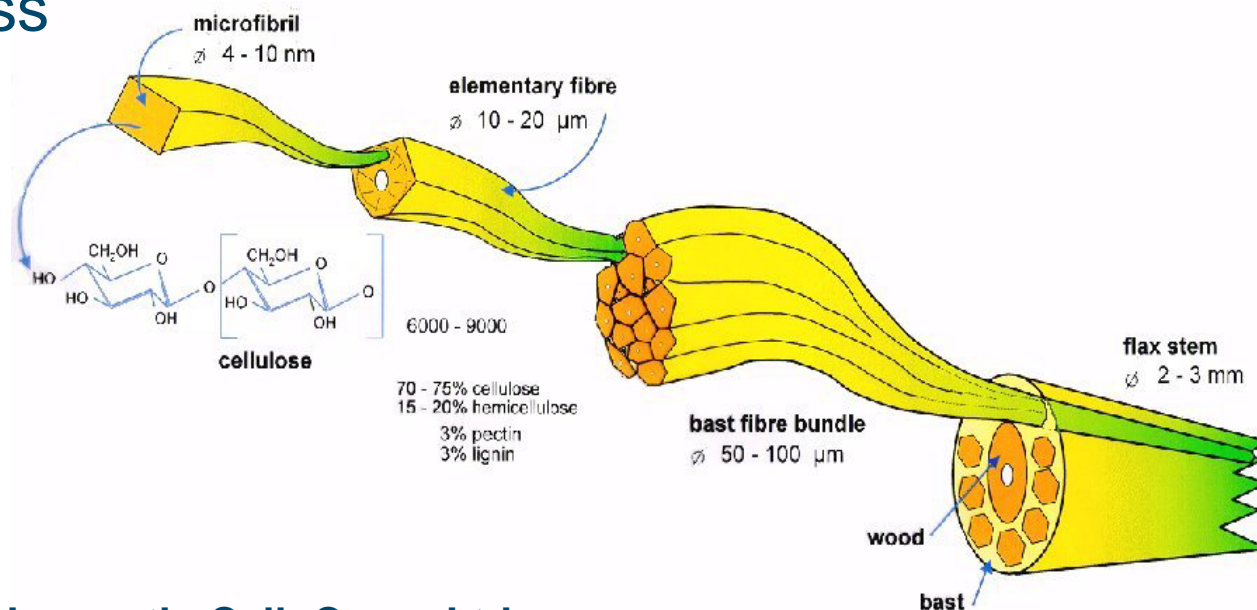


This slide is provided by David Hepworth, CelluComp Ltd

# High performance bio-composite material for sport applications

Curran® developed by CelluComp Ltd

Made from tiny nanocellulose particles that confer tremendous strength and toughness



This slide is provided by David Hepworth, CelluComp Ltd

# High performance bio-composite material for sport applications

- Unique mechanical properties
- Less dense than both glass and carbon fibre
- Unique moulding technology
- Key players: Diawa (Japan), Shakespeare (USA), Vision (Finland), Sharpe's Group (UK)

Further information about CelluComp Ltd and products are at the exhibition table

This slide is provided by David Hepworth, CelluComp Ltd



# Biopolymers for sports applications



**Calvin Klein Golf Jacket with DuPont™ Sorona® Polymer**



**Salomon 'Ghost' freerider alpine ski-boot DuPont™ Hytrel® RS**



**Merquinsa's Pearlthane ECO in Ski Goggles from SMITH OPTICS**



**ARKEMA's Pebax athletic footwear components**

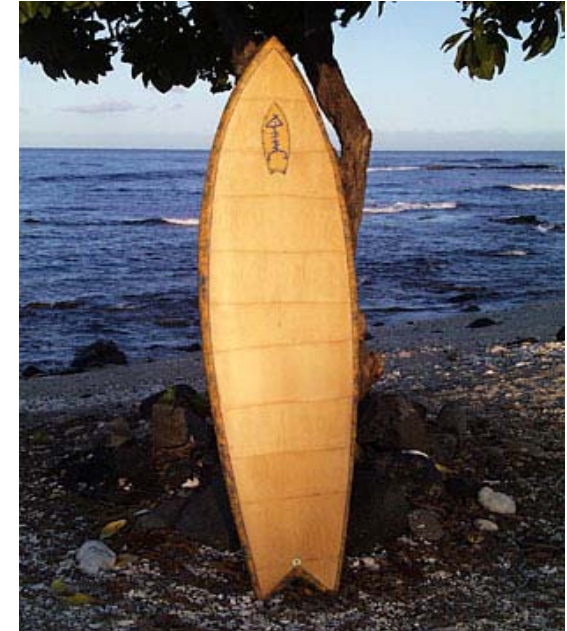
# Bamboo – for sports applications



**K2 Skates –Eco made from bamboo veneer**



**Bamboo snow and surf boards, by Gary Young , Hawaii**



# What is next?



**Chocolate-evolve  
Smith Optics Helmet  
from recycled  
material**



**Helmet shell based on coconut fibre  
Faculty of Manufacturing Engineering,  
Universiti Teknikal Malaysia Melaka**

# Eco-furniture design competition



WORLD ART  
COLLECTIONS  
EXHIBITIONS  
SAINSBURY CENTRE  
for Visual Arts



## InCrops Enterprise Hub EcoFurniture Design Competition



Design an innovative piece of furniture, utilising natural products and materials and win the chance to see your design go into production.

You can find full details of the competition at [www.incropsproject.co.uk](http://www.incropsproject.co.uk) to enter you must read the competition rules and register using the link in the rules. Initial submission deadline is 31 January 2010.



PROJECT  
SUPPORTED BY  
THE EUROPEAN UNION  
European Regional  
Development Fund



ERDF  
low carbon economic growth  
in the East of England



UEA University of  
East Anglia



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