



1. Prof. Oded Shoseyov's lab, The Hebrew University of Jerusalem
2. Melodea Ltd.
3. Valentis Ltd.



Ongoing projects

1. NCC coatings – Coatings of plastic sheets in order to improve mechanical and physical properties
2. NCC reinforced composite materials – Epoxy resins
3. NCC foams



Melodea

Bio-Based Composite Solutions

- * A spinoff of HUJI and the European FP7 program “WOODY Project”
- * Founded by Prof. Oded Shoseyov, Dr. Shaul Lapidot and Mr. Tord Gustafsson in 2010
- * Melodea combines expertise in biomaterials and nanotechnology with industrial expertise in the field of composite materials.
- * The company had signed an investment and sub license agreement with HOLMEN AB, Sweden. A large Pulp and Paper company.
- * Today we are 9 employees, CEO - Yoram Shkedi, Lab and offices in the Faculty of Agriculture, Rehovot



Melodea's Technologies

- * Production of Nano Crystalline Cellulose (NCC) from the waste of the pulp and paper industry

NCC as structural material

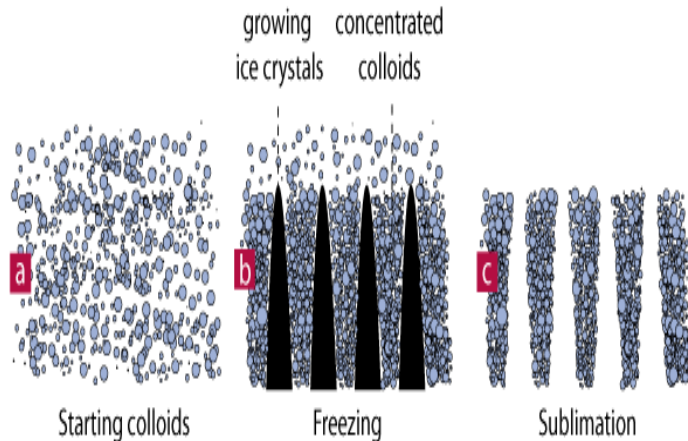
- * nano structured foams made from NCC for sandwich composites applications

NCC as additive

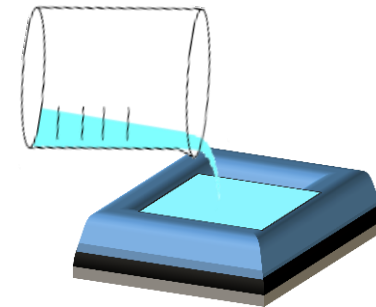
- * Development of NCC based applications for the Pulp & Paper industry and packaging
- * Development of NCC based applications for the construction sector



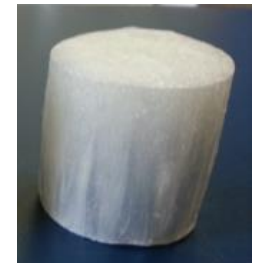
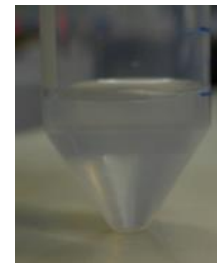
NCC based Foam prepared by Ice Templating



<http://sylvaindeville.net/research/ice-templating-of-porous-materials/>



NCC suspension is cast into a mold,
Followed by Freezing/Solvent
Drying





Management

Dov Segev - CEO, Dr. Sigal Meirovitch - CTO

Inventors

Prof. Oded Shoseyov, Prof. Yossi Paltiel - HUJI, Center for Nanoscience and Nanotechnology Research

Valentis nanotech receives funding and support from the **OCS** and **Trendlines Group**, which is Israel's leading seed stage investor, and operates within the framework of **Trendlines' Mofet Venture Accelerator**.



COST FP1205: Innovative applications of regenerated wood cellulose fibers



Platform Overview

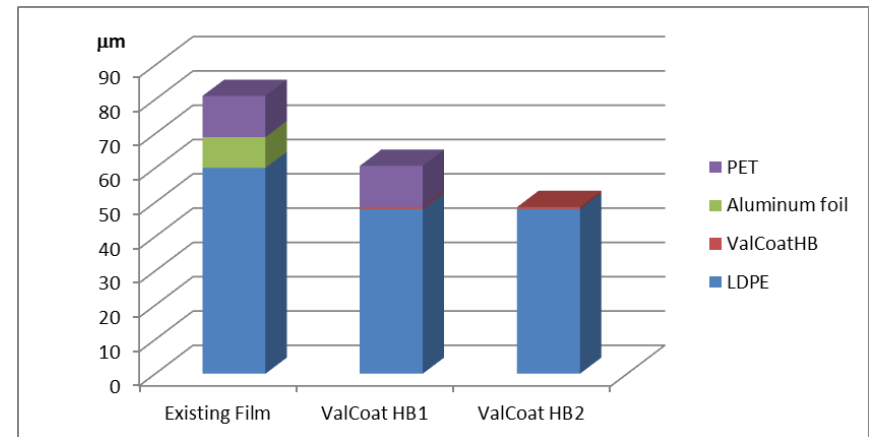
- Novel materials combining NCC and additional nanoparticles
- Incorporated as films in polymer products – easy integration into manufacturing processes
- Improve polymer qualities while maintaining/reducing costs:
 - Lighter
 - Stronger
 - Provides spectrum control while seems to be transparent.
 - Higher recyclability
 - Excellent printing platform
 - Can be tailor made for the customer needs



Valentis nanotech's Technology

ValCoat

- Gas barrier, UV block, thinner sheet
- Eliminates aluminum – meets new regulations, saves material cost, simplifies production
- Enables transparent packaging – marketing value, manufacturer “visual check”





Processing equipment

1. Lab-scale NCC reactor (Melodea Ltd., Rehovot)
2. Film coater (Prof. Shoseyov's lab, HUJI, Rehovot)

Analytical equipment

1. Instron (Prof. Shoseyov's lab, HUJI, Rehovot)
2. HR-SEM, HR-TEM, Cryo-TEM, AFM, XRD (HUJI's Center for Nanoscience and Nanotechnology, Jerusalem)