2 Mers Seas Zeeën
INTERREG IV A
FRANCE - ENGLAND - VLAANDEREN - NEDERLAND

Conference AMPTEC 2014

Advanced Materials and Pharmaceuticals TEChnologies

INTERREG IV A 2 Mers Seas Zeeën Cluster

Programme

Programma

9-11 July 2014
Villeneuve d'Ascq
FRANCE

Overview

Despite the advances made in the last decades there is currently a great need for the development of new solid-state pharmaceutical products with improved solubility, bioavailability, efficacy, safety, chemical and physical stability. In addition, new materials need to be biodegradable, hemocompatible, non-toxic and their physical states fully characterized. It is of importance to develop new products by using novel technologies, for example, nanoparticles, amorphous solid dispersions, cocrystals and implantable devices.

The INTERREG 2 Seas Programme Authorities and the AMPTEC (Advanced Materials and Pharmaceutical TEChnologies) cluster partners have the pleasure to invite you to the AMPTEC 2014 conference. The conference will involve a forum for broad scientific and technological exchange among researchers working in fundamental and applied research from academia or pharmaceutical industry focusing in the following topics: Advanced Materials (amorphous states, cocrystals), Crystallization processes, Biopharmaceutics, Novel formulation and analytical characterization approaches of drug products, New controlled drug delivery systems, Active biomaterials & medical devices and Numerical and theoretical approaches. This conference will offer the opportunity to communicate the outcomes obtained from the IDEA (Improving Drugs Efficacy and Availability) and MultiDES (Development of a Multi-functional Drug Eluting Stent) projects funded by INTERREG IVA 2 Seas to eminent scientists, under/postgraduate students, the industrial sector, local authorities and citizens. The overall aim is to maximize the involvement of healthcare providers and the links between academia and industry, and to present exciting new developments in the field.

This conference is organized in the framework of the Cross-border Cooperation AMPTEC cluster including the Universities of Lille1 and Lille2, Cambridge, Ghent, Greenwich, East Anglia, the Cluster Nutrition Health Longevity, the Flemish SME SEPS-Pharma and several associated partners: Novitom, Cristal Therapeutics, the cluster UP-TEX, Ashford & St Peter's Hospitals NHS and University College London. The partners have built a unique trans-disciplinary network in the 2 Seas cross-border area in order to establish a Centre of Excellence that will promote the excellence of research, innovation and training in advanced materials and pharmaceutical technologies and consequently attract companies for the development of new products, improved healthcare and higher education. This established AMPTEC consortium aims to play a key role in future research, innovation and economic development in the cross border area that will result a positive impact on the quality of life and wellbeing of European citizens.

Location

POLYTECH Engineering School - University of Lille1 (Villeneuve d'Ascq, France.)

Chair

Prof. F. Affouard, University Lille 1, France

Scientific Committee

N. Blanchemain – University Lille2 (France)
D. Craig – University College London (UK)
M. Descamps – University Lille1 (France)
J. Doucet – Novitom (France)
D. Douroumis – University of Greenwich (UK)
W. Jones – University of Cambridge (UK)
B. Martel – University Lille1 (France)
S. Qi – University of East-Anglia (UK)
C. Rijcken – Cristal Therapeutics (The Netherlands)
J. Siepmann – University Lille2 (France)
C. Vervaert – University of Ghent (Belgium)
J. Voorspoels – SEPS Pharma (Belgium)

Local organizing committee

University Lille1/CNRS

S. Boudaoud
N. Correia
F. Danède
P. Derollez
E. Dudognon
A. Hédoux
L. Paccou
J.-F. Willart

University Lille2

M.-P. Flament
M. Hamoudi
Y. Karrout
S. Muschert
F. Siepmann
J. Siepmann

http://amptec2014.univ-lille1.fr

Wednesday 09 July 2014: Day 1

09.00-10.00
Registration and coffee

10.00-11.00
Event Opening

Welcome Talks
- Guy Reumont (Director of the POLYTECH Engineer School, host of the event)
- Jean-François Pauwels (Vice-President of the University Lille1, in charge of research)

The INTERREG IVA 2 Seas cluster initiative
- Edouard Gatineau (Project Officer, JTS INTERREG IVA 2 Seas)

The benefits of INTERREG in Medway
- Solène Ferreira (European Programme Manager, Regeneration and Economic Development Medway Council, UK)

Presentation of the AMPTEC INTERREG IVA 2 Seas cluster
- Frédéric Affouard (Prof. University Lille1, Coordinator AMPTEC cluster)

Presentation of the IDEA and MultiDes INTERREG IVA 2 Seas projects
- Marc Descamps (Prof. University Lille1, Coordinator IDEA project)
- Dionysios Douroumis (Dr. University Greenwich, Coordinator MultiDES project)

Presentation of the Nutrition-Health-Longevity (NHL) cluster implication in the AMPTEC Cluster
- Jean-François Mouney (Vice-President of the NHL cluster - partner of the AMPTEC cluster – Chief Executive Officer and Chairman of the Executive Board of Genfit, co-founder)

11.00-12.20
Round Table

Moderator: Catherine Dupas-Bruzek (Executive scientific officer in charge of Research and Europe at the Lille1 University, member of the H2020 NMBP Advisory group)

The Lille1 University coordinates the cross border cluster AMPTEC in the framework of the INTERREG IVA 2 Seas program which brings together many academic and industrial partners in France, England, Belgium and in the Netherlands. They share their expertise and ideas in research and development of pharmaceutical materials and biomedical devices. In this context, the conference AMPTEC 2014 welcomes from July 9 to 11, 2014 some of the best international experts in this field. During this round table, a panel of academic and industrial experts and politicians gathered to discuss regional strategies and opportunities in terms of research, innovation and training, and connections between academic and industrial sectors.

Topics addressed:

- The capitalization of knowledge and equipment at European level is a vector of economic growth as it allows to create a favorable field for business at the cross-border scale.
- The examples of AMPTEC cluster and the IDEA and MultiDes projects show that networking in the field of academic courses in the 2-Seas area, enables innovation by providing university program which meets new market needs (in pharmaceutical industry in our case).

- The INTERREG IV A 2 Seas Programme is an opportunity to break down the barriers surrounding academic works. It provides a leverage effect to promote an integrated territorial development of our cross border area.
- The AMPTEC cluster initiative meets the three helices model for which innovation is fostered by universities, companies and the government. A quadruple helix concept is also involved by encouraging researchers and companies to make the results of their projects and their innovations accessible to the citizens, enabling them to understand the impact o f European-funded research and innovation on their daily life.

Participants:

- Frédéric Affouard (Prof. University Lille1, Coordinator AMPTEC cluster, France)
- Marc Descamps (Prof. University Lille1, Coordinator IDEA project, France)
- Jean Doucet (Co-founder NOVITOM, Grenoble, France)
- Dennis Douroumis (Dr. University Greenwich, Coordinator MultiDES project, UK)
- Solène Ferreira (European Programme Manager, Regeneration and Economic Development Medway Council, UK)
- Eric Humbert (Project Manager, UP-tex cluster, France)
- Isaac John (Deputy Director R&D, Ashford and St Peter's Hospital NHS Foundation Trust, UK)
- Xavier Maire (Deputy Director General, Conseil Régional Nord Pas de Calais, France)
- Juergen Siepmann (Prof. Univ. Lille 2, Partner of IDEA & MultiDES projects, France)
- Jody Voorspoels (Director SEPS Pharma Clinical Trial Manufacturing, Chief Scientific Officer, Ghent, Belgium)

Questions:

- How does the 2 Seas area perform on the international scientific scene?
- What is the added-value of cross-border cooperation for research and training?
- What is the interest for an SME (or a cluster) to participate to a cross border project?
- What are the roles of businesses (clusters) in such projects?
- How can we improve the links between businesses and academics in the 2 seas area?
- What is the interest for Ashford and St Peter's Hospital NHS to participate to an INTERREG project? What could be the impact for citizens health?
- Is there a European regional strategy in terms of research and innovation? What are the advantages to be at the heart of a European crossroads?
- How to maintain and sustain this cooperation across the borders? What are the links with other programs?

12.20-12.30

Conclusions & Future plans

Synthesis of what MultiDes, Idea projects and the AMPTEC cluster bring to the 2 Seas area.

Presentation of what is planned for the future of the Cluster.

- F. Affouard (Prof. University Lille1, Coordinator AMPTEC cluster)

12.40 – 14.00

Lunch

14.00 – 16.00

SESSION: Amorphous materials (I)

Chairperson: Lian Yu

14.00 – 14.30 Elias FATTAL: Nanotechnologies for drug delivery: are they safe and efficient?

14.30 – 15.00 Marc DESCAMPS: Perspectives on the crystal/amorphous duality of pharmaceuticals

15.00 – 15.30 Simon J.L BILLINGE: Amorphous or nanocrystalline? Looking beyond the amorphous halo with the total scattering pair distribution function method

15.30 – 16.00 Jean DOUCET: Synchrotron micro-XCT: A new non-destructive technique for imaging the 3D microstructure of pharmaceutical solid dosage forms at high resolution

16.00 – 16.30

Coffee Break / Poster Session

16.30 – 18.30

SESSION: Amorphous materials (II)

Chairperson: Marc Descamps

16.30 – 17.00 Lian YU: Engineering Organic Glasses through Surface Mobility

17.00 – 17.30 Marco GEPPI: Sructural disorder, polymorphism and dynamics as seen by solid state NMR: the case of Ibuprofen

17.30 – 18.00 Madalena DIONISIO: Nanoconfinement effects on ibuprofen based guests in mesoporous silica matrices

18.00 – 18.30 Timo RAGER: Solubility in polymers – an important parameter for the development of amorphous solid dispersions

18.30 – 20.30

WELCOME PARTY

Thursday 10 July 2014: Day 2

09.00 – 10.30
SESSION: Cocrystals and Multicomponent systems (I)

Chairperson: Rafel Prohens
09.00 – 09.30 William JONES: Mechanochemistry: a versatile approach to materials synthesis and its specific role in pharmaceutical sciences
09.30 – 10.00 Naír RODRIGUEZ-HORNEDO: Cocrystals and their shifting transition points
10.00 – 10.30 Dennis DOUROUMIS: Continuous cocrystallization of pharmaceutical products via Hot Melt Extrusion processing

10.30 – 11.00
Coffee Break / Poster Session

11.00 – 12.30
SESSION: Cocrystals and Multicomponent systems (II)

Chairperson: William Jones
11.00 – 11.30 Rafel PROHENS: Cocrystal Prediction: a reality for new drugs
11.30 – 12.00 Raj SURYANARAYANAN: Advanced X-ray diffractometric techniques to characterize multicomponent pharmaceutical system
12.00 – 12.15 Elena DICHIARANTE: Tuning drugs release via multicomponent crystal forms
12.15 – 12.30 Jacques LOUBENS: An approach to the measurement of drug-excipient incompatibility

12.30 – 14.00
Lunch

14.00 – 16.00
SESSION: Crystallization processes

Chairperson: J-F Willart
14.00 – 14.30 Stéphane VEESLER: Small-volume and localized fields for nucleation understanding
14.30 – 15.00 Lennart LINDFORS: Crystal nucleation of poorly soluble drugs
15.00 – 15.30 Simone CAPACCIOLI: Crystallization kinetics and dynamics of amorphous pharmaceuticals under high pressure
15.30 – 16.00 Nacer IDRISSI: Solubility and polymorph forms of paracetamol in supercritical CO_2

16.00 – 16.30
Coffee Break / Poster Session

16.30 – 19.00
SESSION: Stability in Pharmaceuticals & Biopharmaceuticals

Chairperson: Simone Capaccioli
16.30 – 17.00 Michael PIKAL: Stabilization of Freeze Dried Disaccharide Based Formulations by Limited Addition of Polyols, Amino Acids, and Salts: What is (are) the Mechanisms?
17.00 – 17.30 Attilio CESARO: Conformational disorder and atropisomerism in pharmaceutical compounds
17.30 – 18.00 Job UBBINK: Structure formation in amorphous carbohydrates and proteins: phase behavior, barrier properties and relation to encapsulation performance
18.00 – 18.30 Jean-François WILLART: Physical stability of amorphous molecular dispersions
18.30 – 19.00 Mark SHON: Controlled nucleation in Manufacturing. Current state of development

19.30 – 21.30
Wine and cheese: Networking cocktail

Friday 11 July 2014: Day 3

09.00 – 10.30
SESSION: Drug delivery systems

Chairperson: Alain Hédoux
09.00 – 09.30 Juergen SIEPMANN: Local Controlled Drug Delivery to the Inner Ear
09.30 – 10.00 Anette LARSON: Cellulose derivatives for controlled release
10.00 – 10.30 Duncan CRAIG: New nanofabrication techniques for drug delivery

10.30 - 11.00
Coffee Break / Poster Session

11.00 – 12.30
SESSION: New approaches for formulations and their characterizations

Chairperson: Jurgen Siepmann
11.00 – 11.30 Sheng QI: Next generation solid dispersion design: engineering nanostructured materials
11.30 – 12.00 Chris VERVAET: Continuous manufacturing of pharmaceutical: wet granulation
12.00 – 12.30 Alain HEDOUX: Phase Transformation of APIs induced by various stresses analyzed in real time by Raman spectroscopy

12.30 – 14.00
Lunch

14.00 – 16.00
SESSION: Biomaterials & medical devices (I)

Chairperson: Nicolas Blanchemain
14.00 – 14.30 Xavier GARRIC: Strategies of modifications of implantable meshes for soft tissue reinforcement: Anti-infectious effect and MRI visibility
14.30 – 15.00 Tony McNALLY: Functional Materials for Pharmaceutical and Medical Device Technologies prepared via Hot Melt-Extrusion
15.00 – 15.30 Bernard MARTEL: Cyclodextrins modified biomaterials applied to the sustained delivery of drugs
15.30 – 16:00 Barbara BELLICH: Exploring strategies for chitosan nanoparticles with improved mucoadhesive properties

16.00 – 16.30
Coffee Break / Poster Session

16.30 – 18.00
SESSION: Biomaterials & medical devices (II)

Chairperson: Bernard Martel
16.30 – 17.00 Nicolas BLANCHEMAIN: Medical devices functionalized with Cyclodextrins : In vitro and in vivo evaluation
17.00 – 17.30 Tim DOUGLAS: Hydrogel-mineral composites for bone regeneration
17.30 – 18.00 Karen EDLER: Self-Assembled Polymer-Protein Nanostructures

18.00
Closing address

For further information on the 2 Seas Programme, please visit our website :

www.interreg4a-2mers.eu

INTERREG IV A 2 Mers Seas Zeeën

Secrétariat Technique Conjoint / Joint Technical Secretariat /
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"Investing in your future"

Crossborder cooperation programme
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The Interreg 2 Seas Programme is an EU funding programme which promotes crossborder coopera- tion between partners from France, England, Belgium (Flanders) and The Netherlands. It aims to develop the competitiveness and the sustainable growth potential of maritime and non-maritime issues through the establish- ment and development of cross border partnerships.