

Collaboration Chisinau – Kiel becomes traditional

Ala Cojocaru

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	Occupational activity
1996	Diploma in Physics at the State University of Moldova
1996 - 2006	Patent examiner , State Agency on Intellectual Property of the Republic of Moldova, Patent Expert (AGEPI)
2003	PhD thesis defense at the Institute of Applied Physics of Academy of Science
2007 - 2008	Fellowship at Christian-Albrecht-University of Kiel sponsored by Alexander von Humboldt Foundation
2008 - 2011	Scientific Collaborator (Postdoc) , at Chair for General Materials Science, Christian Albrecht-University of Kiel
From 2011	Projects Coordinator , Research and Development Department, Phi-Stone AG Guest Scientist at Christian-Albrecht-University of Kiel

Nucleation of Kiel – Chisinau collaboration: Strasbourg, Conference on Material Science 1999

Prof. Helmut Föll
General Materials
Science, CAU

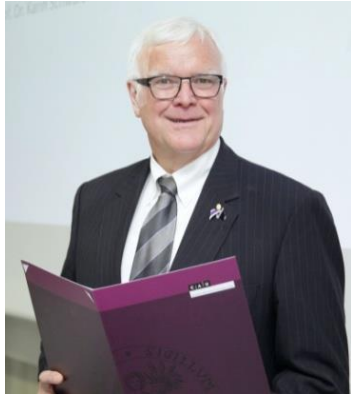


Prof. Ion Tighineanu
National Center for
Materials Study and
Testing, TUM

Two great persons meet himself
2019 – 20 years of successful collaboration

Kiel – Chisinau collaboration (since 1999)

Prof. Helmut Föll
General Materials
Science



Prof. Rainer Adelung
Functional Nanomaterials



Prof. Ion Tighineanu
National Center for Materials
Study and Testing



Prof. Dr. Lorenz Kienle
Synthesis and real structure
group



Results:

- 8 research projects (INTAS, DFG, Humboldt, EU)
- More than 150 publications!
- Many students visited and collaborate with TF CAU
- Workshops and Conferences

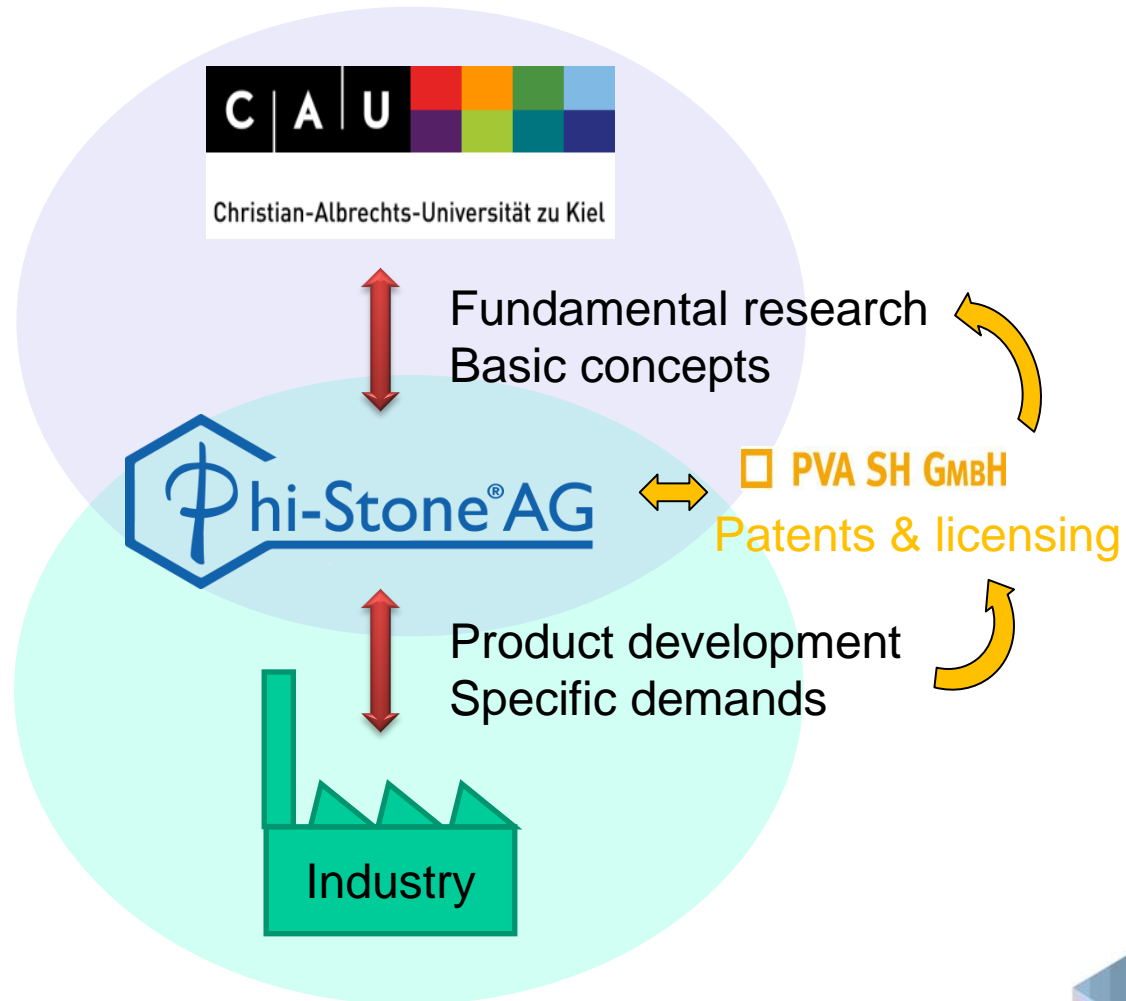
Perspective possibilities for cooperation with Phi Stone AG

Founded :

- 2012 as start-up / spin-off.
- 2014 restructured into **FUMT R&D GmbH**
- 2017 May, restructured into **Phi-Stone AG**

Goals & Tasks:

- Implementation of ideas from basic research into products (technology transfer)
- Mediation of questions from industry to research facilities (demand based)
- Licensing of patents and production of special components





Academia

Industry

Funded
research
projects

Technology
transfer

Scientific
services

Product
development

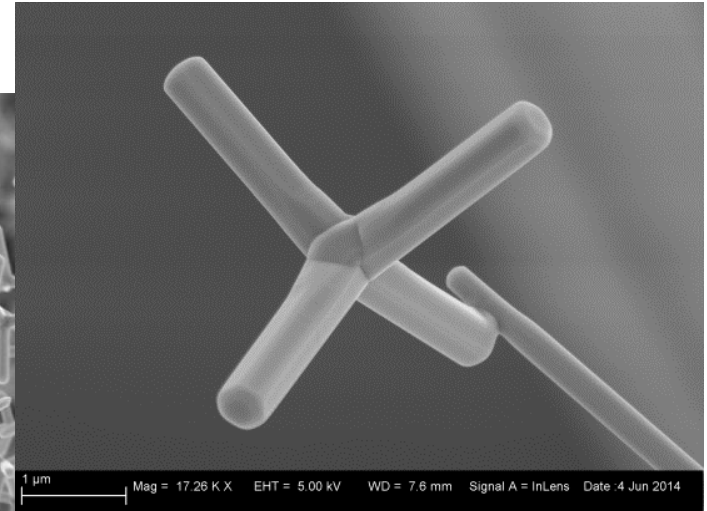
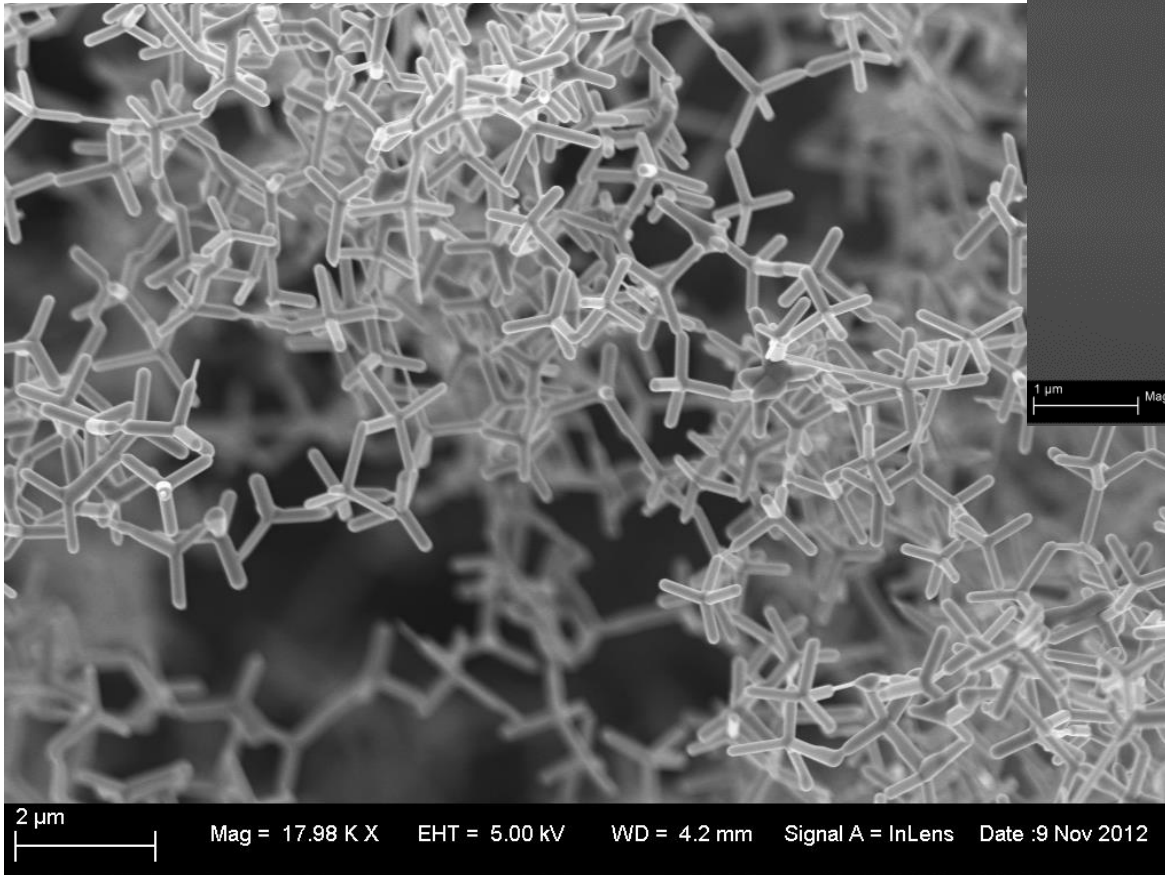
ZIM: DKL/WEA
AiF: Nanomet
Interreg: Rollflex

Patents & licenses
(PVA is also
shareholder of Phi
Stone AG)

Analytics, e.g.:
SEM, Raman, ...
Application training,
Tech. consulting

 **CSP**-composites
e.g. in medical
application,
adhesion

Tetrapodal Zinc Oxide (t-ZnO)
Large application possibilities



Brand:



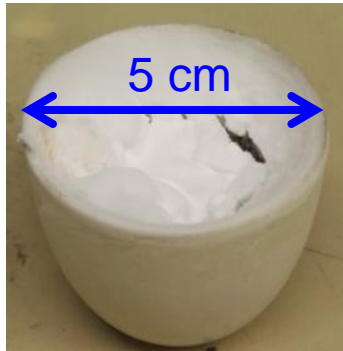
Applied as additive

Flame transport synthesis

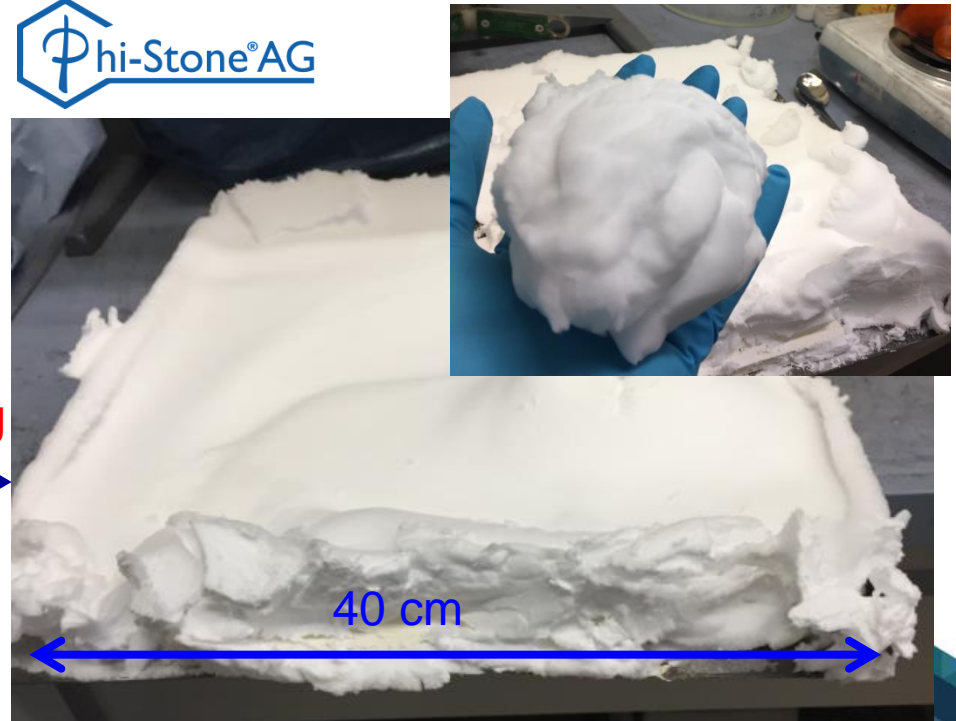
Used process:



Particle & Particle Systems Characterization [Volume 30, Issue 9](#), pages 775–783, September 2013

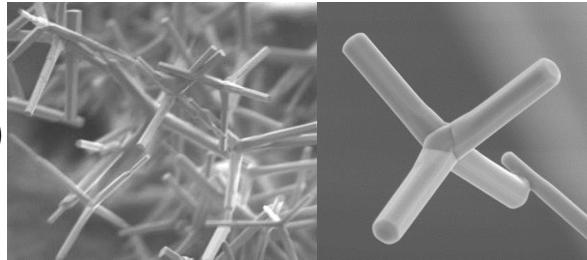


0,5 g Up-scaling 50 g



Base product

Tetrapodal Zinc Oxide (t-ZnO)

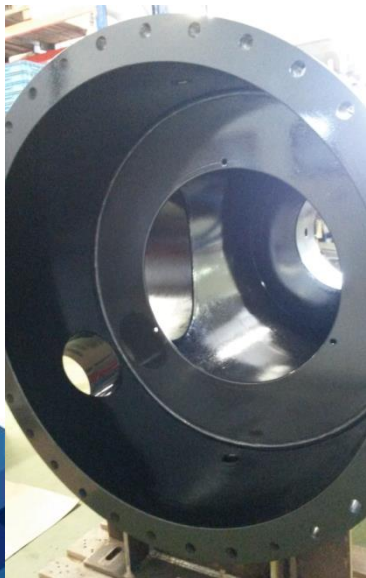


Brand
→



Applications of CSP

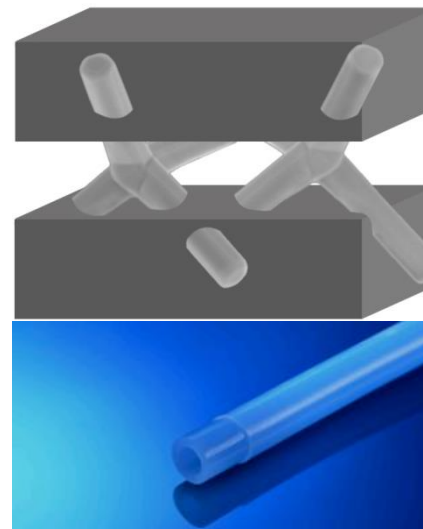
Enhanced full
solid polymers



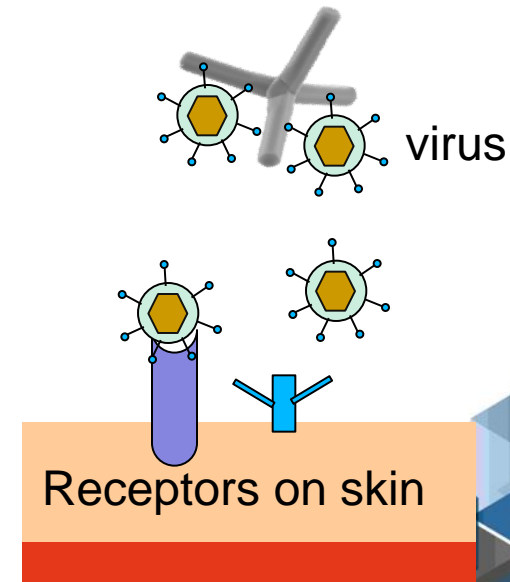
Light scattering



„Micro staples“
composites

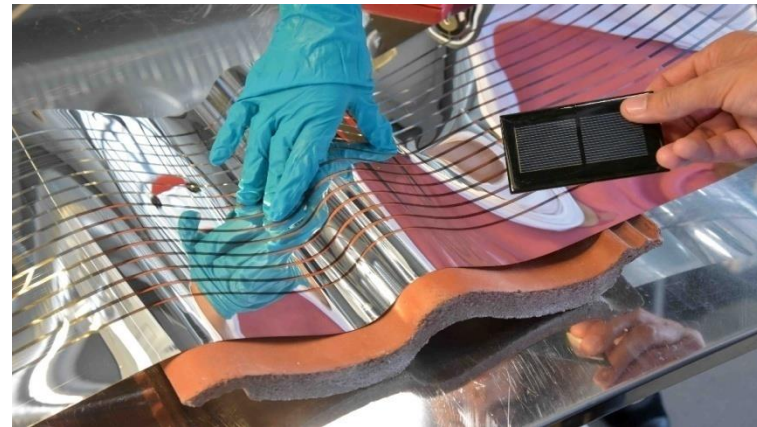
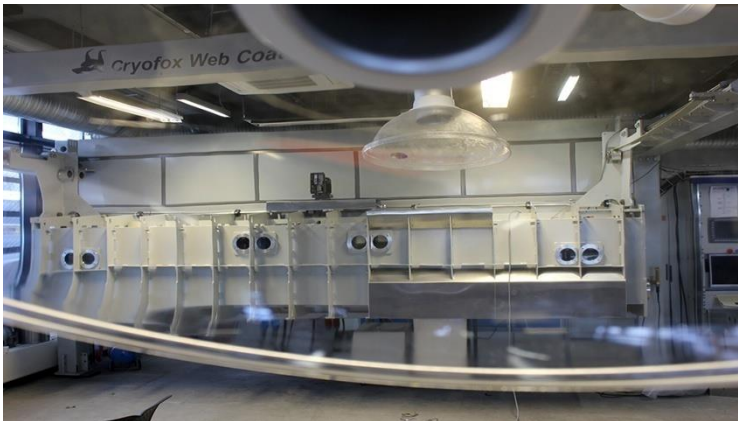


Medical (antiviral)



Example: Initiation of Rollflex R2R Innovation Centre:

- to establish a connection between industry and universities and beyond the national borders of the regions (North Germany and South Denmark)
- to contribute to the use of the large market potential for sustainable energy solutions by establishing the production of flexible OPV and OLEDs



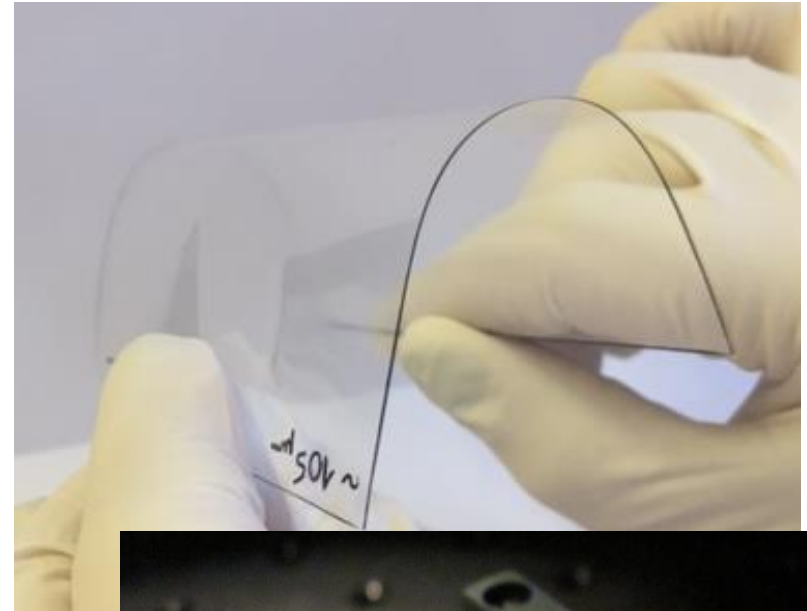
<http://rollflex.eu/de/rollflex-ein-innovationsprojektcenter/>

More about Interreg EU Program on www.interreg5a.eu

First results:

OLED Stack on PTU foils

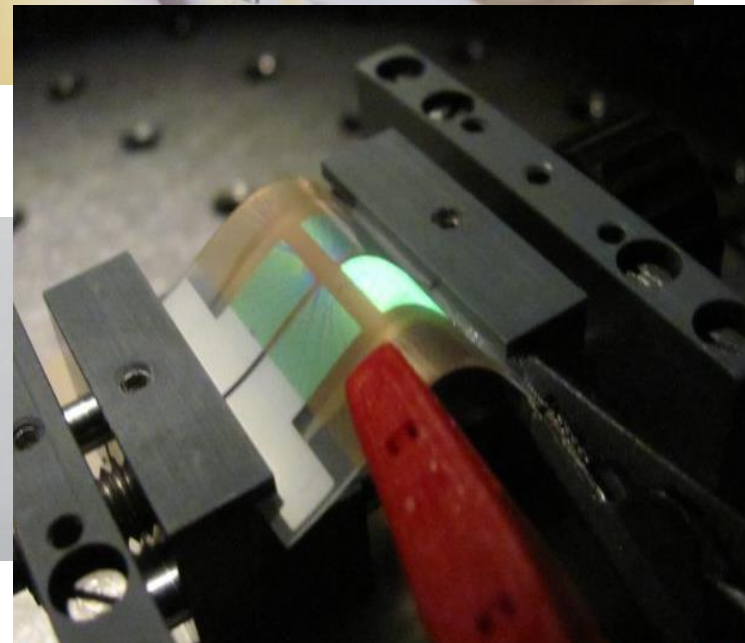
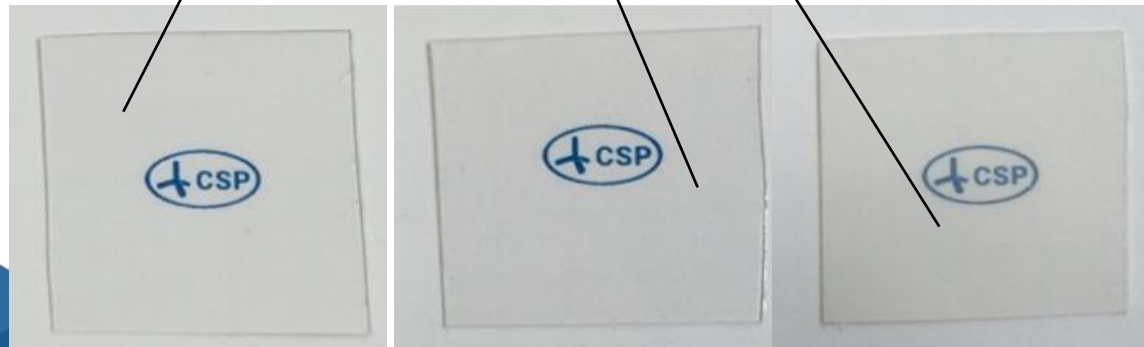
Al:LiF	200 nm
Alq ₃	50 nm
NPB	30 nm
MoO ₃	10 nm
PEDOT:PSS	60 nm
Au	8 nm
Polythiourethane with t-ZnO	



0 wt % t-ZnO

0,5 wt % t-ZnO

1 wt % t-ZnO



**We have good experience in collaboration with
Moldova scientists and good basis for new joinable
project applications**

Partners & networks



tf Technische Fakultät
Funktionale Nanomaterial

PVA SH GMBH



Nanoscience Centre NanoSYD
SDU
MADS CLAUSEN INSTITUTE



Fluid- & Prozesstechnik
Innovation durch Technologie

CELLOscan
analysis • service • consulting

ma design

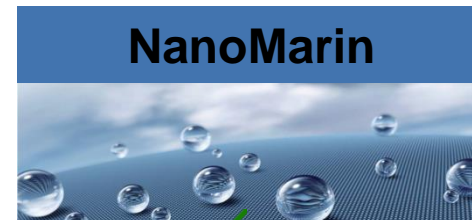


Interreg
Deutschland - Danmark



rollflex
R2R Innovationscenter

Smart Mat & Surf



STENSBOURG

Acknowledgments



Thank you for your attention!