NANOMEDNORTH

MEDEON

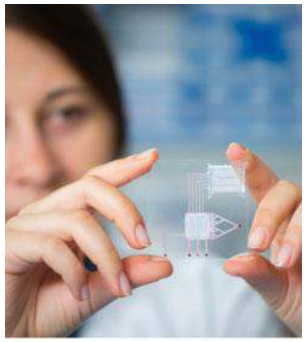
NanoMed North
– a consortium with 140 + members

- Communication Platform (www.nanomednorth.com)

  Events, projects, interactions, co-arranging/supporting meetings

- Annual meeting and Focus Seminar (2017 at Chalmers)

- International presentations



- Main purposes of NMN:

  Generate increased awareness -> increased funding to nanomedicine projects and interactions between members and partners including sharing of knowledge

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– a consortium with 140 + members

- Appearances Q1/Q2 2017:

  Vinnova (Jan 19)

  World Cancer Day (Feb 2)

  ENATRANS Sthlm breakfast meeting (Feb 6)

  British Society for Nanomedicine (April 3-4)

  CLINAM (May 8-10)

  NanoMed North Annual Meeting and Focus Ser
  Chalmers, Gothenburg (May 31)

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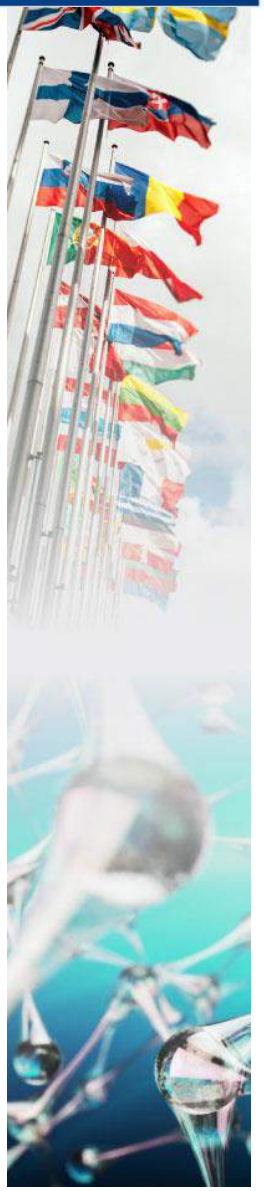
NanoMed North
– a consortium with 140 + members

- Collaboration with national and international organisations

- British Society for Nanomedicine
  European Society for Nanomedicine (ESNAM)
  Clinical Nanomedicine (CLINAM)
  European Technology Platform Nanomedicine (ETPN)
  ENATRANS

  Academy
  Companies
  RISE (SP)
  Etc.



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NanoMed North
– a consortium with 140 + members

- NMN Members

- Individuals mainly from Sweden, Denmark, Norway –

  but also a few from Germany, France and the Netherlands
  33 % from industry – 66 % from academy/institutions

- Selection of members:

  Karolinska Institute, Chalmers Technical University, Lund university, Malmö university, Danish Technical University, Uppsala university, CNRS, Linköping University, RISE (SP), Acreo, Biopeople, Swedish Medical Nanoscience Center;

  SPAGO Nanomedical, Infingent, Innoscentia, Silmeco, Nanolith, Blusense, Transunit, Insplorion, Cellevate, Zealand Pharma, Thin Film Electronics, Salipro, Nanologica, Disruptive Materials, Cline Scientific, Colloidal Resource, Vironova, Innovosens, Cebio, Zelmic, Nandatec, d liver, Solve Research, Obducat Technoligies, Camurus, Moreinx, Galenica, EBBA Biotech

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NanoMed North
– a consortium with 140 + members

- NMN Board

- Ulf G Andersson, Medeon Science Park & Incubator
  Agneta Richter Dahlfors, Karolinska Institute (Swedish Medical Nanoscience Center)
  Maria Kempe, Lund University (Nanomedicine and biomaterials)
  Åsa Sjöholm Timén, Truly Translational AB (ex. Spago Nanomedical AB)
  Thomas Arnebrant, Malmö University (Research center for biointerfaces)
  Fredrik Håkansson, MNE Sweden AB
  Tomas Rindzevicius, Danish Technical University (DTU Nanotech)

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Ebba Biotech

REVOLUTIONIZE STAINING methods using OPTOTRACER nano-technology

04/17

Carbotrace™

Carbohydrate detection.

02/17

ECtracer™

First product for biofilm detection in 3 variants.

11/16

Amytracker™ series

Amyloid detection in three new colors

01/16

website/webshop

ebbabiotech.com

- **Marketing**
- **Quality Control**
- **Supply Chain**
- **Shipping**
- **Terms & Conditions**

12/15

Amytracker™ 545

First product for Amyloid detection.

06/15

Founded

Agneta Richter-Dahlfors, vd

SWEDISH
medical nanoscience
CENTER

Karolinska Institutet

www.medicalnanoscience.se

Mission

- Push the frontiers of the nanomedicine research field
- Interdisciplinary research for the benefit of the patient and improved future health care
- Innovations leading to better research tools for life science
- Generate new, smart consumer products

Founders KI, VINNOVA, Carl Bennet AB

Director Professor Agneta Richter-Dahlfors

Medical systems

Bacteria / virus
Cell cultures
Animal models
Human material
Clinical trials
Patients

+

Tech platforms

Organic bioelectronics
Nanoparticles
Supercritical fluids
Intravital imaging
Imaging probes
Optotracing

=

Medical areas

Infection
Tissue Microbiology
Neurological disorders

New tools

Infection control
Optotracing
Sensors and Drug delivery
Imaging probes

SOLVE
Research & Consultancy

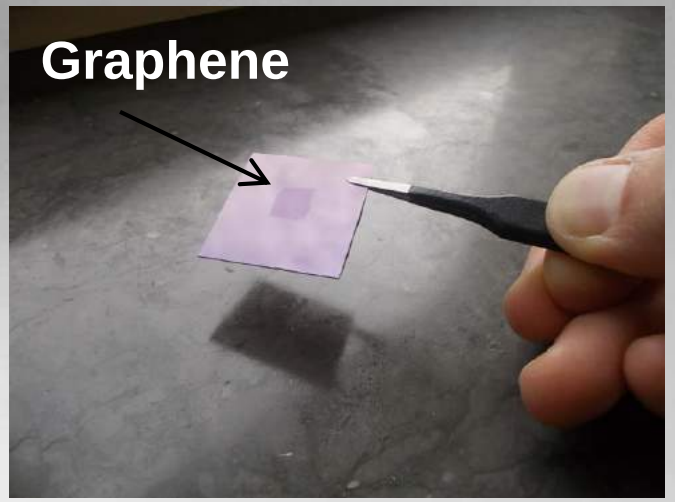
SOLVE is a CRO that is specialized in measuring the properties and behaviour of challenging biomaterials, where conventional methods often fail. Our business concept is to provide companies the ability to access the separation technology field-flow fractionation for material investigations. We are world leading experts in field-flow fractionation and we support our analytical services with consultation services to provide complete solutions for materials characterization, development and application. We have partnered with small biotech startups to multinational pharmaceutical companies.

A wide range of materials can be investigated by field-flow fractionation including biomacromolecules, protein and protein aggregates, monoclonal antibodies, virus-like particles, ribosomes, liposomes, exosomes, formulation excipients, polysaccharides, emulsions, and more. The US FDA lists field-flow fractionation as a preferred technique for characterization of protein aggregation in protein pharmaceuticals, emphasizing the importance of more complete material characterization.

We would like to meet companies interested in advanced characterization methods for proteins and protein aggregates, polysaccharides, nanoparticles etc. We are also interested in meeting companies looking to outsource research and analytical activities.

Please contact us:
Sebastian@solveresearch.com www.solveresearch.com

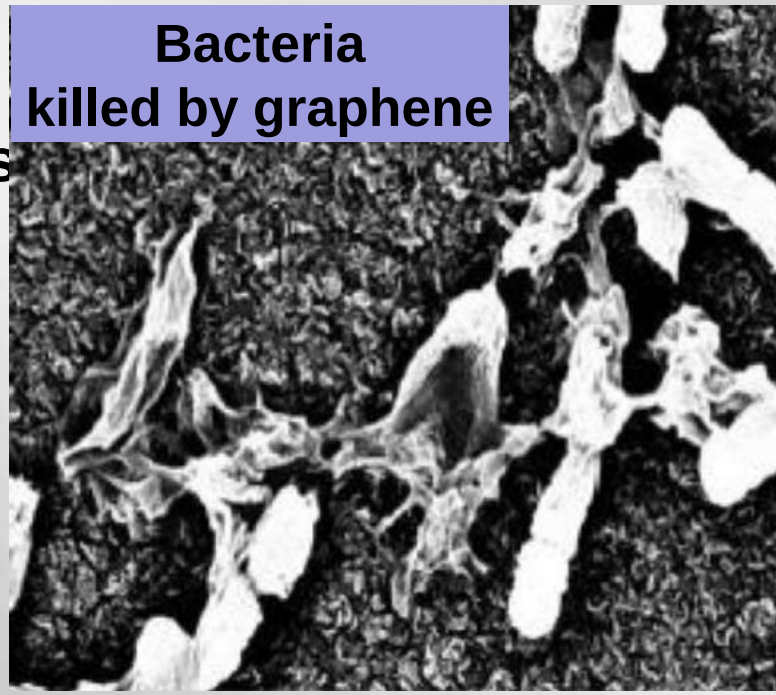
Chalmers University of Technology
Jie Sun, Associate Professor



1. Production of graphene films by CVD (chemical vapor deposition)
2. Graphene for optoelectronic devices
3. **Graphene coating for antibiotic applications**
4. **Graphene for drug delivery studies**
5. **Graphene in biochip sector**
6. **Graphene for other bioaplications**

Looking for collaborators in items 3-6. Please contact
jie.sun@chalmers.se

Bacteria killed by graphene



Cellevate

EXPERIENCE A NEW DIMENSION OF RESEARCH

We minimize the gap between *in vivo* and *in vitro*

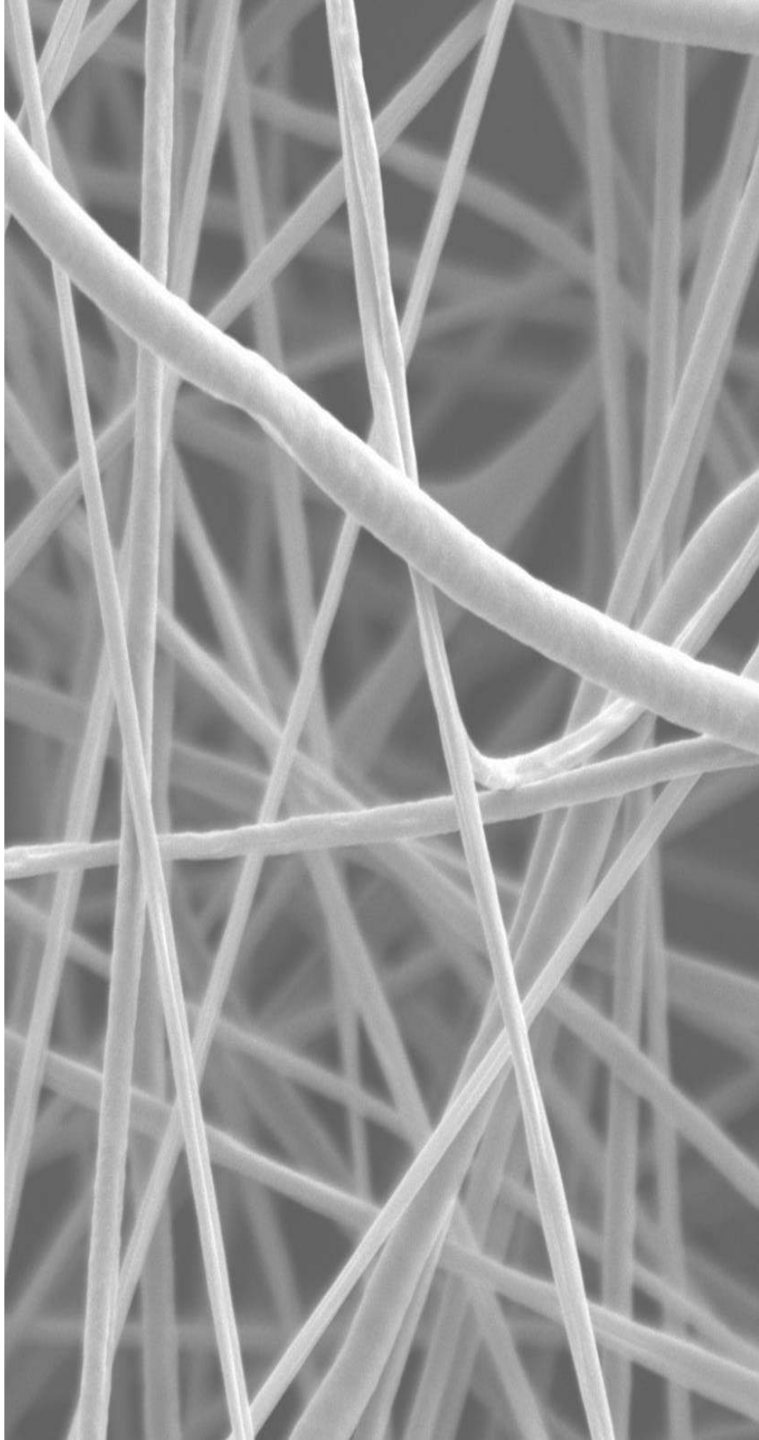
Cellevate

Cellevate is an innovative biotech company that develops the next generation of cell culture systems.

We create highly porous and consistent networks of nanofibers through a patented manufacturing process. Cells in these networks are allowed to proliferate and interact with other cells in three dimensions, in contrast to the monolayer cultures seen on conventional two dimensional surfaces.

Our goal is to provide life science researchers with more realistic in-vitro models, for more relevant data and successful research.

For more information please visit www.cellevate.com



Nanobiotechnology// Biosensing// Clean Tech

Biocompatible nanoparticles

Nano-surface modifications

Biochemical engineering

Product development

Contract research

nandatec

Offer

We are looking for:

- Contract research
- Development of innovative products
- Medical writing jobs

We can provide:

- Contract research
- Development of innovative products
- Medical writing jobs
- Clinical study design
- eCRF
- Certified Clinical center for clinical studies

nandatec

Contact

OFFICE	LAB	INFORM
nandatec GmbH Große Altefähre 33 23552 Lübeck Germany	nandatec GmbH @ IZET Innovationszentrum Itzehoe Fraunhoferstr. 3 25524 Itzehoe	Tel.: +49 451 140 99 43 Fax: +49 482 177 85 55 info@nandatec.com http://www.nandatec.com nandatec@twitter.com

nandatec

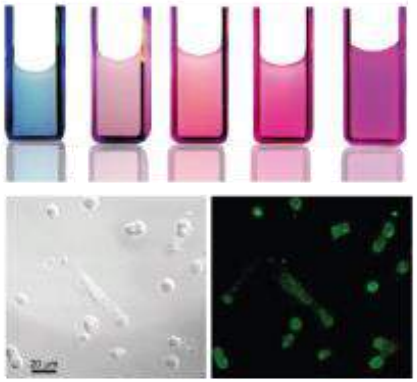
Nanobiomaterial Research

Georgios A. SOTIRIOU | Asst Professor
Department of Microbiology, Tumor and Cell Biology |
Karolinska Institutet | Stockholm | Sweden

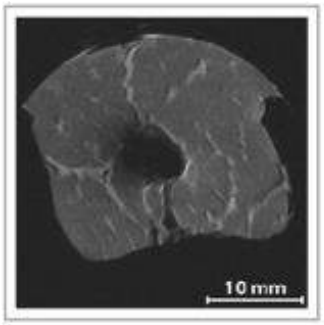
E-mail: georgios.sotiriou@ki.se
Telephone: +46 73 372 87 20
Website: https://sotirioulab.net

Diagnostics

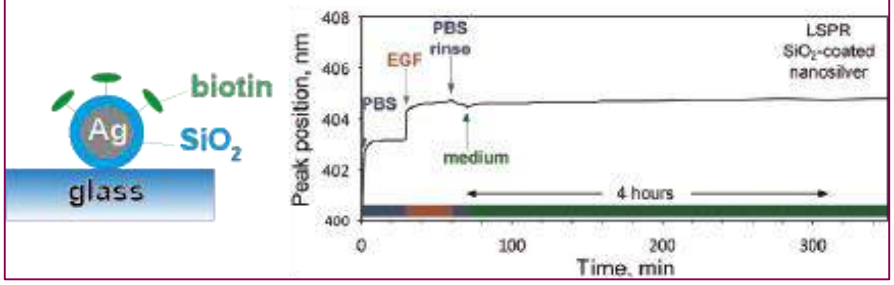
luminescent *in vitro* bioimaging agents



magnetic *in vivo* MRI contrast agents

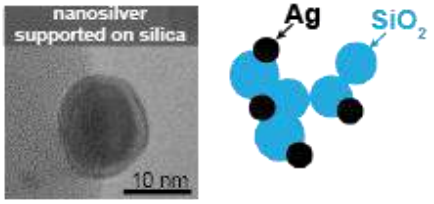


robust plasmonic biosensors

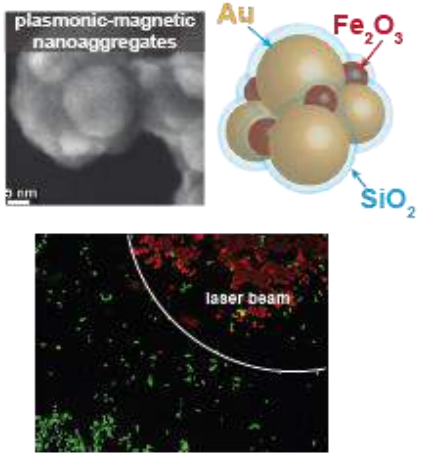


Therapeutic

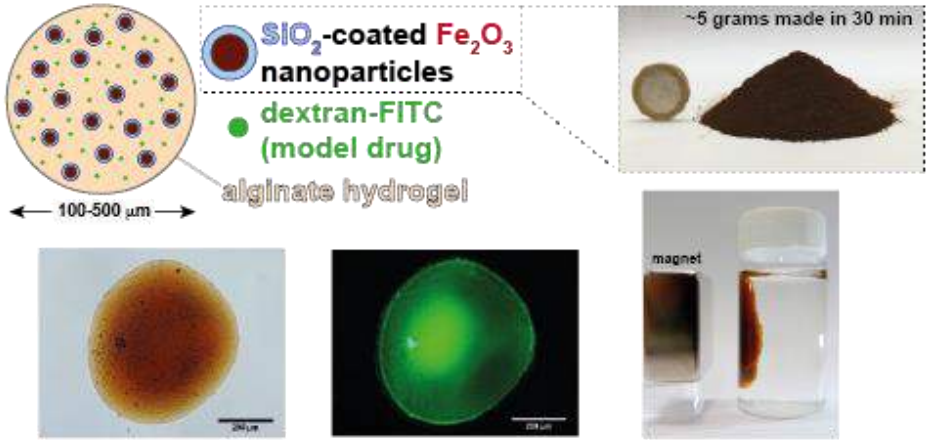
antibacterial nanosilver



near-IR photothermal



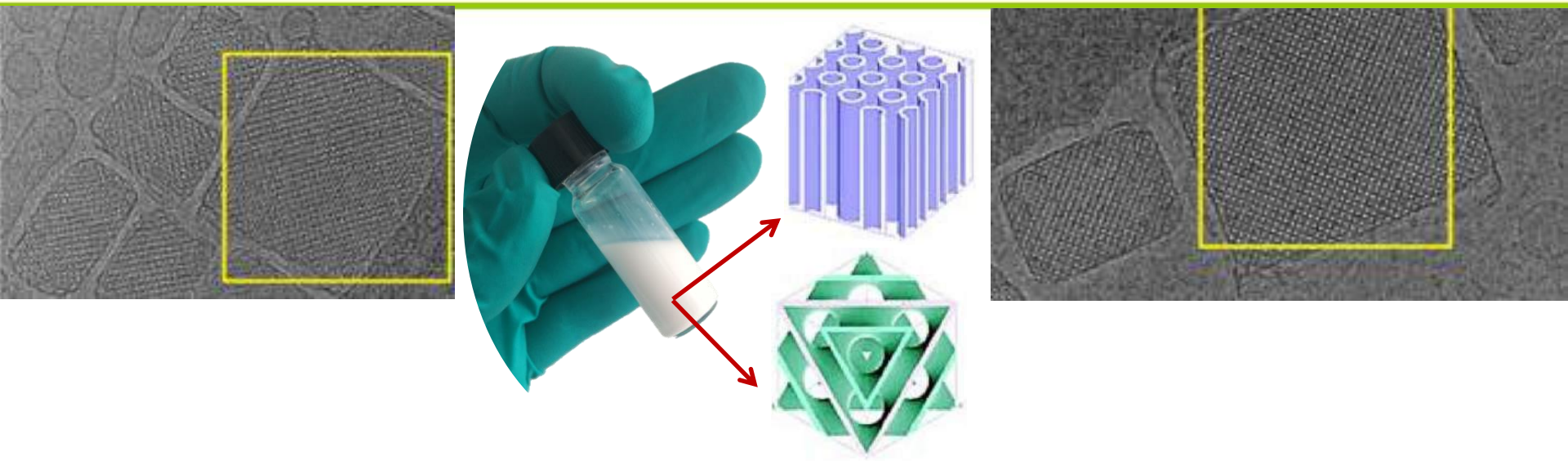
multi-scale architectures for enhanced drug release by hyperthermia



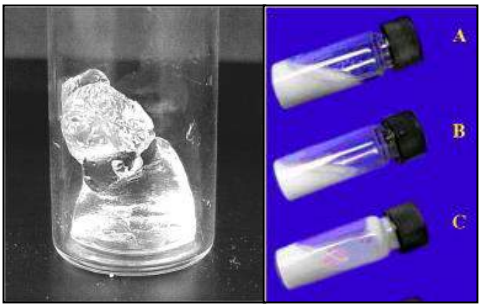
Publication list:
https://sotirioulab.net/publications/

Anan Yaghmur

Department of Pharmacy
Faculty of Health & Medical Sciences
University of Copenhagen, Denmark

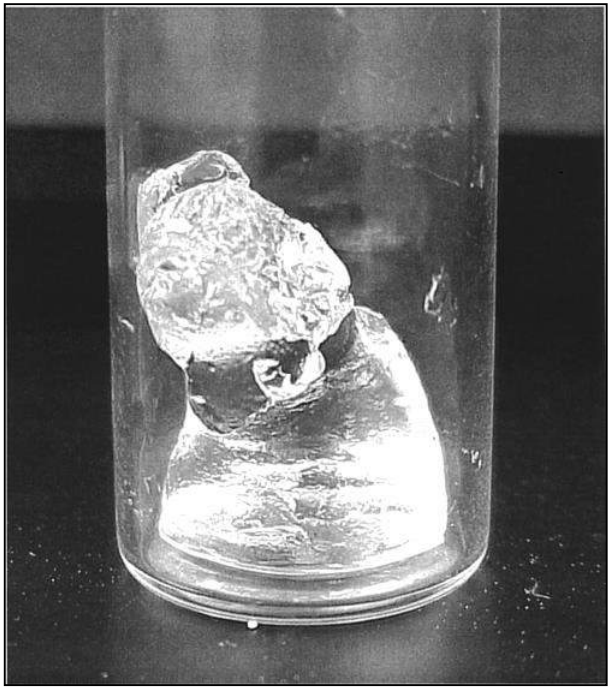


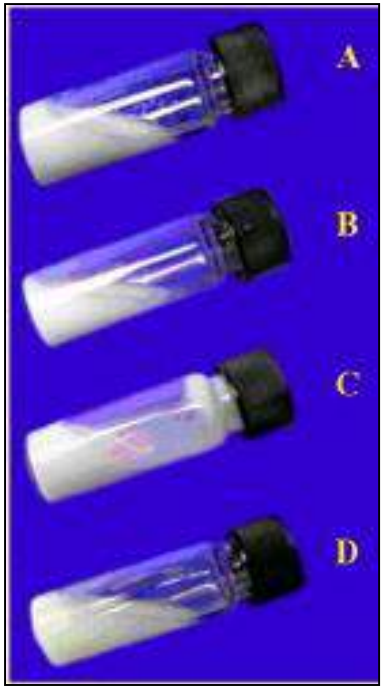
Soft Cubosomal and Hexosomal Drug Nanocarriers

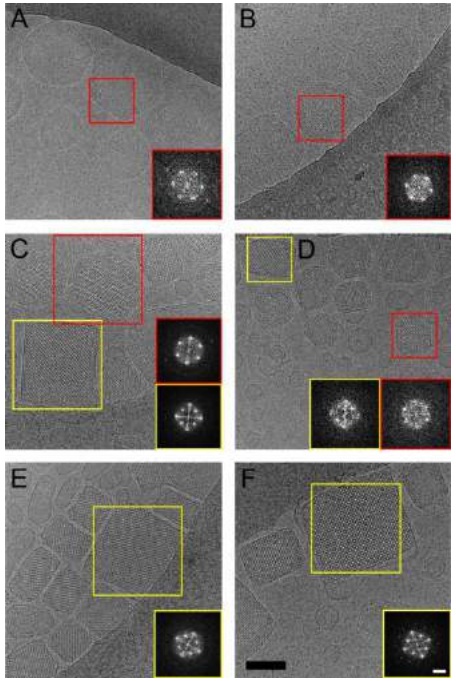


- **ADVANTAGES:**
  - Capability to load drugs & Imaging Probes with different physicochemical properties
  - Nanostructured dispersions with large interfacial area & low viscosity

Soft Self-Assembled Drug Nanocarriers







Two promising approaches for pharmaceutical applications:

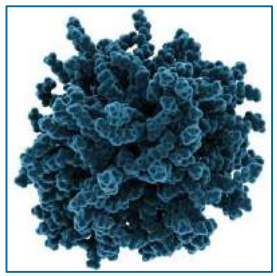
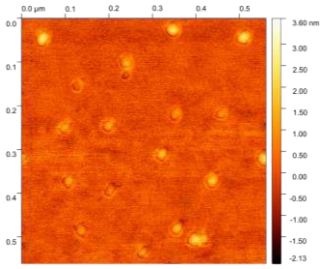
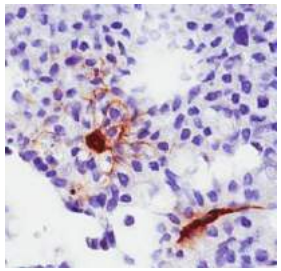
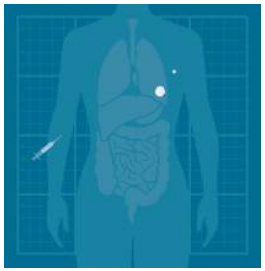
- **The formation of aqueous dispersions with well-defined internal nanostructures**
- **The *in situ* formation of the liquid crystalline phases at the administration site**
- These approaches may provide simple and inexpensive methods for delivering drugs

Nanomaterials for diagnosis and therapy of cancer

- Proprietary technology for passive accumulation of nanoparticles in tumors
- Functional nanoparticles by means of composition – not drug delivery
- Unique projects for tumor control;

  SpagoPix: Tumor selective contrast agent for MRI with exceptional signal strength

  Tumorad: Radionulice therapy with potential for broad application against solid tumors
- Business aim to develop and run projects to clinical trials followed by partnering or out-licensing

Soft Matter Technology & Bioengineering

- DNA Liquid Crystal Nanostructures

  Sung et al., *Nucleic Acids Res.* **44**: 1421 (2016)

- Microneedle-based Drug Delivery Devices

  Sung et al., *Biomed. Microdevices* **16**: 645 (2014); Sung et al., *Biomed. Phys. Eng. Express* **3** [in press]

- Smart Microgels for Drug Release & Tissue Regeneration

  Sung et al., *J. Colloid Interface Sci.* **450**: 26 (2015); Sung et al., *JoVE* **108**: e53680 (2016)

- Nanofluid Transport Dynamics in Circulatory Systems

  Sung et al., *J. Phys. D: Appl. Phys.* **48**: 345402 (2015)

Baeckkyoung Sung, Ph.D.

Centre de Recherche Paul Pascal - CNRS
33600 Pessac, France

RISE Research Institutes of Sweden

Description of activities in the nanomedicine area:

- Applied research and innovation projects in collaboration with industry, academia and/or healthcare providers
- Analytical services
- Coordination of large collaborative projects
- Organization of networking events, courses and workshops

With focus on:

- Inorganic porous and magnetic nanoparticles for diagnostics and drug delivery systems
- Nanostructured surfaces for antibacterial applications and medical devices
- Organic nanoparticles (lipidbased nanocarriers, polymerbased nanocarriers) for improved drug delivery (peptides, proteins, small molecules)- formulation development, advanced characterization, product formulation, process development, scale-up.
- Nanosafety (physico-chemical characterization, in vitro, ex vivo and in vivo models)

Project examples:

FORMAMP- Innovative nanoformulation of antimicrobial peptides, www.formampproject.com

EC4SafeNano - European Centre for Risk Management and Safe Innovation in Nanomaterials Nanotechnologies http://cordis.europa.eu/project/rcn/205603_en.html

RISE Research Institutes of Sweden

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Project examples:

FORMAMP- Innovative nanoformulation of antimicrobial peptides, www.formampproject.com

EC4SafeNano - European Centre for Risk Management and Safe Innovation in Nanomaterials Nanotechnologies http://cordis.europa.eu/project/rcn/205603_en.html

NanoReg - A common European approach to the regulatory testing of Manufactured Nanomaterials, www.nanoreg.eu

EMPIR – Innanopart: Metrology of Innovative Nanoparticles http://empir.npl.co.uk/innanopart/

THANK YOU!

www.nanomednorth.com

Ulf G Andersson,
founder and chairman

MEDEON NANOMEDNORTH