International Brokerage Event
Istanbul 30/11/2016

ICTURKEY
ISTANBUL 2016

University College of Southeast Norway

Kaiying Wang

E-mail: kaiying.wang@hbv.no

This presentation is for

☐ **Workshop 1** Big Data
☐x **Workshop 3** Photonics and Micro-and-Nanoelectronics
☐ **Workshop 2** Robotics
☐ **Workshop 4** internet of Things

HSN description

- The University College of Southeast Norway (USN) is the country's second largest state-owned university college, measured in the total number of students, and larger than several of Norway's universities.

- The University College of Southeast Norway aims to have a regional foundation, and with eight campuses, we have a strong and clear presence in one of Norway's most exciting and dynamic regions.

- Total staff: listed as full-time equivalents (FTEs): 1,485 (2015)
- Financing: Government grant/Basic grant: 1,639 B. (2016)

TiO2 Nanotube Membranes for energy applications

Professor Kaiying Wang

Department of Micro/Nano Systems Technology - IMST

University College of Southeast Norway - HSN

Email: kaiying.wang@hbv.no

Tel: +47 3100 9317

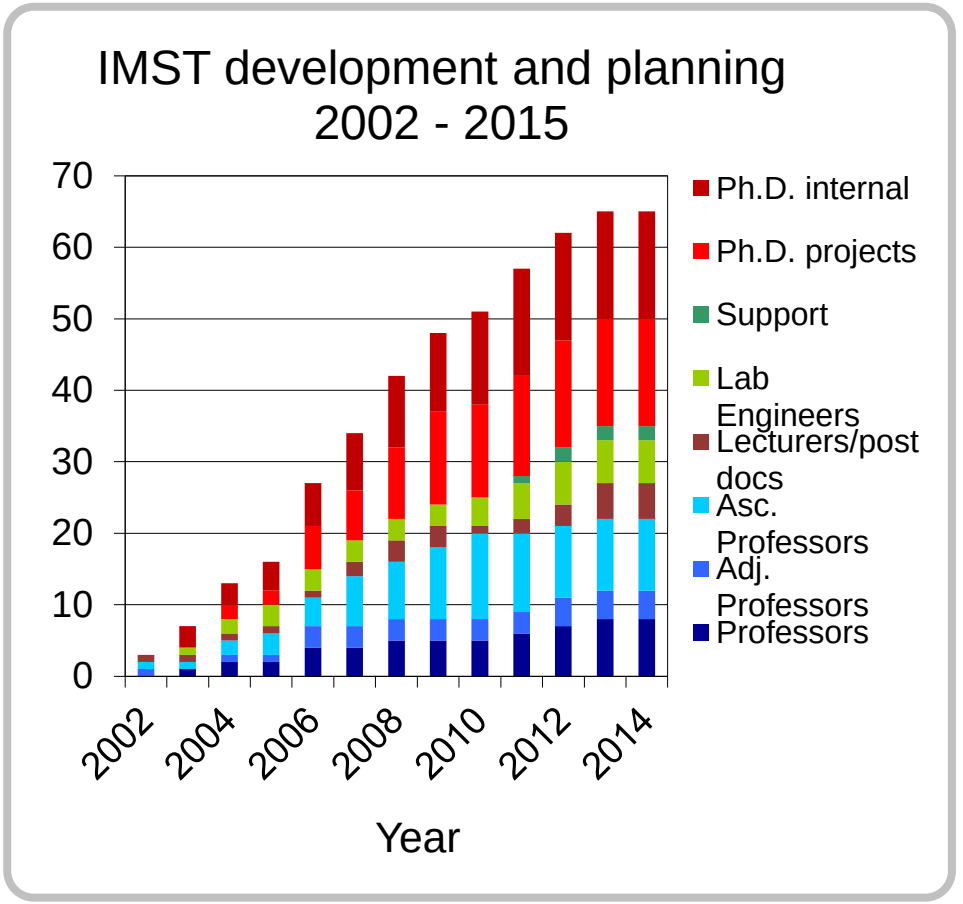
IMST - one of the largest academic research groups within micro and nanosystems technology in Norway

Research interests:

- Fabrication of TiO2 nanotube membrane
- Photoconductive membrane and TNTs
- Betavoltaic battery
- Photochemical conversion and Solar fuels
- Perovskite solar cells

Department of Micro and Nano Systems Technology

- Academic institution performing industry relevant research and education within:
  - micro- og nano scale sensors, actuators, mechanical structures , fluidic systems and energy devices
  - Materials and processes to be used for integration of such devices into complete micro- and nano systems
  - Application of such systems in industrial products and services for the best of society



ICT-31-2017: Micro- and nanoelectronics technologies
Scope: a. Research and Innovation actions

Title: Betavoltaic effect in wide band-gap nanotube arrays and its application in high-efficient isotope microbatteries

- Objectives:
  - To built up basic theory for matching betavoltaic effects and TiO2 nanotubes arrays
  - To create a optimal spatial structure for collecting beta radiation and increasing the conversion efficiency.
  - To demonstrate a reliable, long liftetime and high efficiency structure for the application of ultra-low power micro battery

- Expected results
  - To understand their fundamental mechanism and technique requirement
  - To propose a new type power enabling technique for micro/nano systems

Consortium - profile of known/unkown partners

No	Partner Name	Type	Country	Role in the Project
01	HSN	Higher Education	Norway 1	Coordinator (nanotube arrays)
02	IFE	RTO	Norway 2	Partner (isotope technique)
03		TBD	Country 3	Partner (theory – radiation)
04		TBD	Country 4	Partner (device design, packaging)
05		TBD	Country 5	Partner (nanosafety)
06				
07				
08				

Kaiying Wang
University College of Southeast Norway
Department of Micro/Nano Systems Technology
Norway
Tel:+47 3100 9317
E-mail:kaiying.wang@hbv.no
Web: www.usn.no