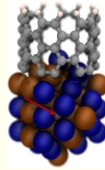
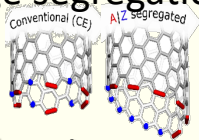


Theory – 14th Symposium on Computational Challenges in Two-Dimensional Materials and Nanotubes (CCTN19)

Chirality selection by catalysis

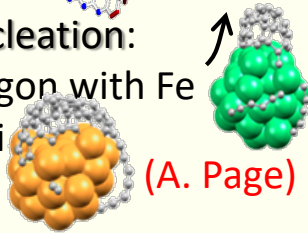
FeNi bimetallic catalysts (C. Vets)

Edge segregation (K. V. Bets)



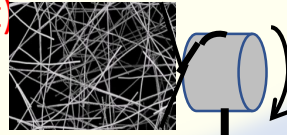
Growth

Etching/Nucleation: more pentagon with Fe than with Ni

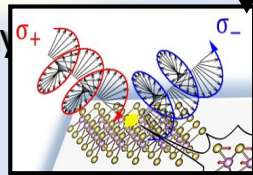


(A. Page)

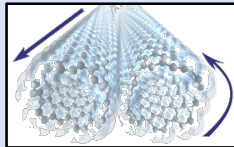
Dynamics of CNT aerogels for Spinning into CNT fibres (J. Elliott)



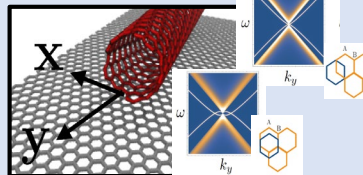
New physics with circularly polarized light (R. Saito)



Mechanics by CNT Nano-Gear (Z. Wang)



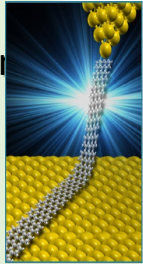
CNT displacement on graphene to alter electronic structures (B. Flebus)



Prediction

Graphene nanoribbon

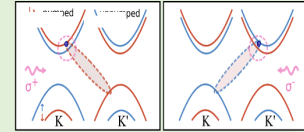
Key role determining emission properties (D. Prezzi)



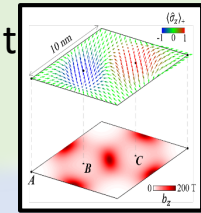
Optics

Exciton in TMD

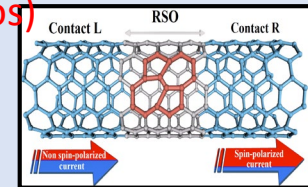
Dark-exciton playing roles in pump-probe dynamics (M. Selig)



Moiré superlattice bilayer with interlayer excitons (H. Yu)



Controlling spin-polarized currents with Rashba spin-orbit effect by defect (H. Santos)



Chair:

Yoshiyuki Miyamoto (AIST, Japan)

Local Organizer:

Ermin Malic (Chalmers UT, Sweden)

Organizer:

Christophe Bichara (CNRS and Aix-Marseille U, France)

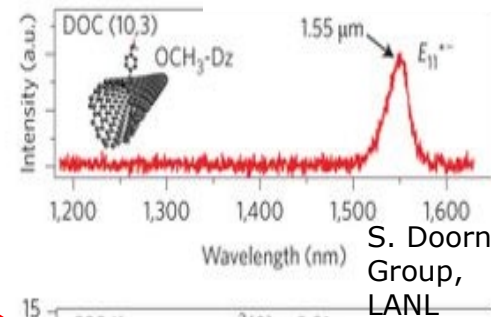
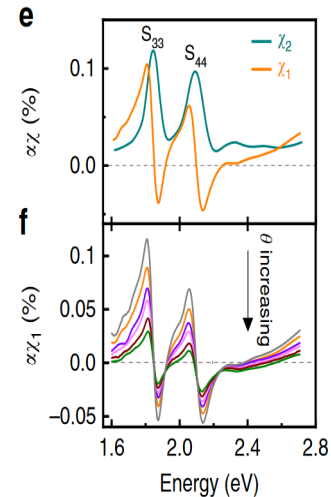
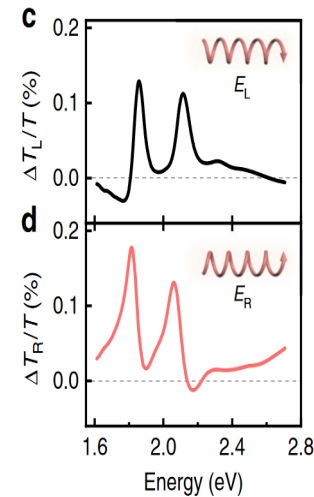
Zhuhua Zhang (Nanjing University of Aeronautics and Astronautics, China)

Take home message: "Theorists are trying to connect theory and experiments by linking between time/length scales"



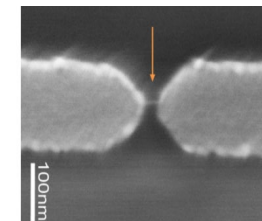
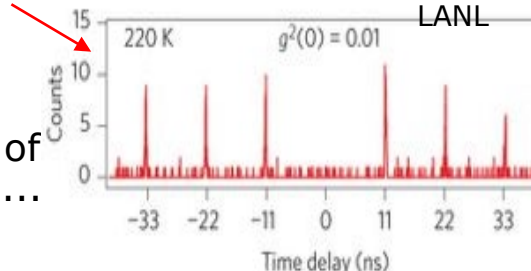
13th Symposium on Nanotube Spectroscopy, Photonics, and Applications in Metrology (Jorio, Hartschuh)

- Materials: SWCNTs, DWCNTs, Heterostructures, Functionalized composites, TMDCs, Graphene, Nanowires..
- Techniques:
 - Linear and non-linear spectroscopies and microscopies, **single-nanotube spectroscopy**
- Phenomena
 - Quantum emission & photon correlations**
 - Defects and functionalization
 - Excitons, exciton-polaritons,
 - Environmental coupling: Outside / Inside of CNTs, DWCNTs coupling, filling with dyes....
 - Energy & charge transfer
- Collaborative efforts (Examples)
 - Integrated nanophotonic devices**
 - Materials synthesis / fabrication (Chirality enrichment) and characterization and metrology

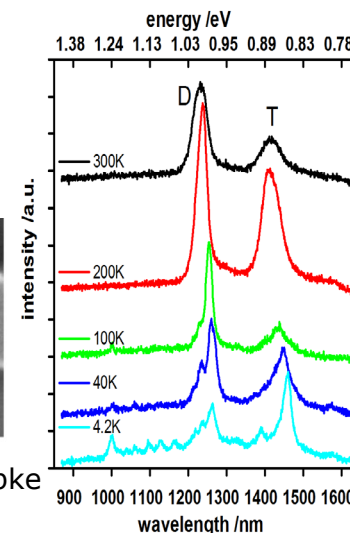


K. Liu group, Peking Univ.

- 11 talks
- 27 posters



A. Riaz, Krupke group KIT



10th Symposium Nanobio CNBMT19

The nanobio symposium touched upon all things nano-bio related, from sensors, toxicity, new materials, to art and philosophy!

A tutorial by **Michael Strano** touched on the past, present, and ongoing achievements of single-molecule detection, a holy grail for biosensing community that is achievable with our favorite nanomaterials.

Sonia Freddi discussed carbon nanotube electronic sensors to detect volatile compounds in patients with lung disease

Yuhuang Wang presented on electrical sensors based on tube-inside-tube chemistry, based on orthogonal functionalization of outer nanotube chemistries and inner tube characterization, as well as scalable, biocompatible approaches for suspending nanotubes using superacids in the absence of sonication.

Alessandra Antonucci brought nanotubes to a new kingdom of organisms—bacteria--which are surrounded by cell walls that introduce an unexplored set of challenges for internalizing nanoparticles. She showed nanotube uptake in bacteria and presented a custom-built confocal setup for characterizing nanoparticle distribution in living and dividing cells.

Charlotte Allard's work explored Raman probes using dyes inside of nanotubes. She used dye-inside-tube architectures to image cancer cells and living crustaceans swimming around in a beaker.

Ming Zheng described molecular perceptron--a machine learning approach that may detect a disease fingerprint using many optical responses from diverse DNA-SWCNT libraries

Daniel Heller described a helical polymer-nanotube architecture that selectively detects albumin in cancer patients' urine to detect disease. He also developed nanotube paints that an artist is using to make near-IR art, and Dan is using to make paintable sensors.

Sebastian Kruss is making nanobody-nanotube complexes to image individual proteins that walk along biological fibers.

Eri Hirata is infusing metals with carbon nanomaterials to make carbon-sponge scaffolds based on nanotubes, nanohorns, and graphene for regenerating bone tissue.

Minfang Zhang studies long-term biodistribution and biodegradation of nanotubes inside mice. She showed low toxicity of her nanotube injections and even bio-removal of the nanotubes from inside the lungs and liver after 60 days.

Silvana Fiorito showed that multi-walled carbon nanotubes can trigger proinflammatory factors and cytokines in brain resident immune cells, for controlling cell behavior.

Gili Bisker's sensors detect insulin and fibrinogen, and she develops algorithms to maximize the amount of information we can collect from single-molecule detection events.

10th Symposium on 2d Materials GSS19

about 50 abstracts

Main Subjects covered

- **Synthesis and characterization**

various 2D materials : TMDC, 2D Au, Bi₂O₂Se...

heterostructure: BN on C structures, mixing CNT and 2D materials

effort towards the synthesis of high quality crystals and large size

- **Manufacturing heterostructures, bilayer graphene ,**

- **Excitonic and optical properties**

overview of TMD@hBN

complex interlayer excitons in heterostructures

effect of defects in WS₂

spectroscopy of polaritons, condensation of polaritons

plasmonic –photonic crystals

- **Physics of spin:** Magnetic tunnel junctions, read out of spin defects

- Electrostatically defined quantum devices in bilayer graphene

- A Dirac fermion wave reflector ...

Organizers

Annick Loiseau (LEM, CNRS-Onera,
France)

Alex Högele (Chalmers UT, Sweden)

7th Carbon Nanotube Thin Film Electronics and Application Symposium (CNTFA 19, 'Electronics')

Esko I. Kauppinen (Aalto U, Finland)

Yutaka Ohno (Nagoya U, Japan)

Christoph Strunk (U Regensburg, Germany)

SEI1 - L. Peng

SEI2 - J. Zhao

SEI3 - Th. Gao

10 min break

SEI4 - K. Mustonen

SEI5 - N.F. Hartmann

SEI6 - A. Sekiguchi

SEI7 - E Laird

SEI8 - P. Hakonen

SEI9 - A. Hüttel

10 min break

SEI10 - Y. Yaish

SEI11 - L. Cong

SEI12 - A. Descombin

electronics

Printed logic gates

vDW Heterojunction Devices

Tunneling barrier

SEI13 - M. Hersam

SEI14 - Y. Hu

SEI15 - L. Liu

SEI16 - E.X. Ding

SEI17 - A.G. Nasibulin

SEI18 - Z. Ma

SEI19 - T. Szkopek

SEI20 - D. Lioubtchenko

10 min break

SEI21 - V. Koman

SEI22 - A. Tsapenko

Gigahertz Integrated Circuits

Floating Catalyst CVD

Broadband Bolometers

Photodiodes

Graphene FET

Aerosolized Probes

Oriented SWCNT Films

Optomechanics

Suspended SWCNT

Nanotube Resonators

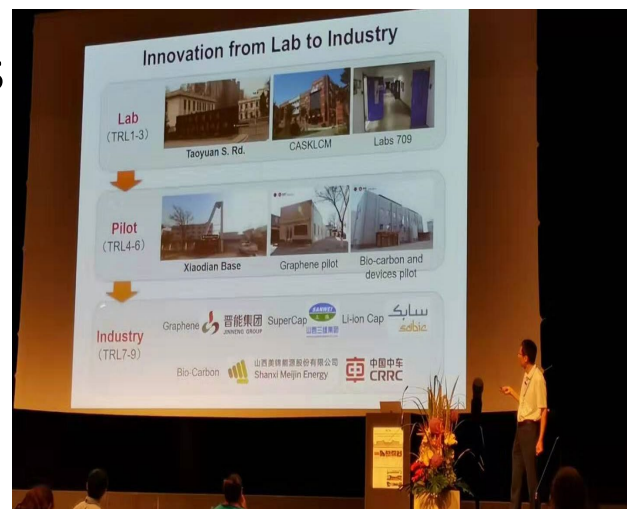
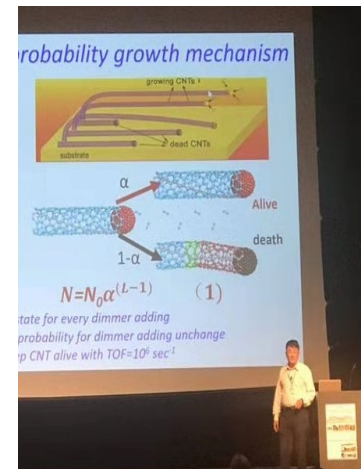
Mechanical Oscillator

Ultrathin Flexible Electronic



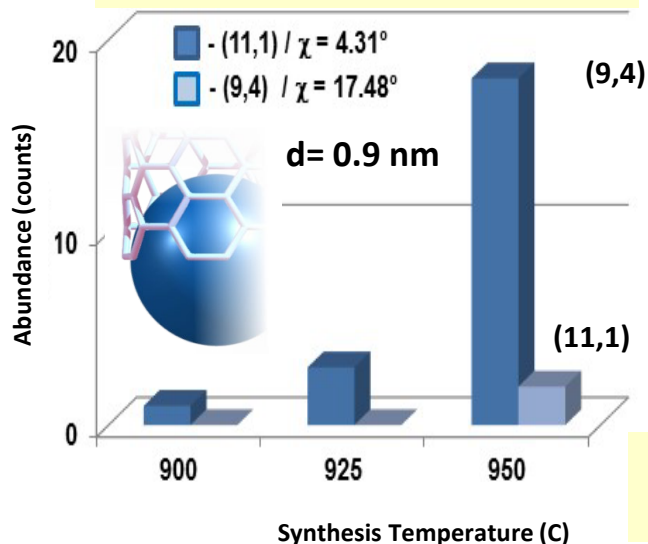
2nd Symposium on Nanocarbon Materials for Energy and Sustainability (NMES19)

- Energy Conversion & Storage
 - Perovskite Solar Cells
 - Batteries & Supercapacitors
- Sustainability
 - Thermal Energy Harvesting
 - Electrocatalysis
- Emerging Nanocarbon Materials
 - Cu/CNT composite
 - SWCNT composites
 - Graphene hybrids

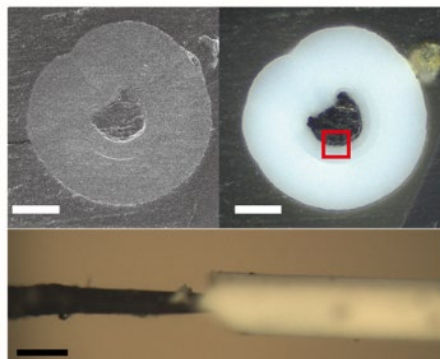


1st Symposium on Synthesis, Purification and Functionalization of Low-Dimensional Materials

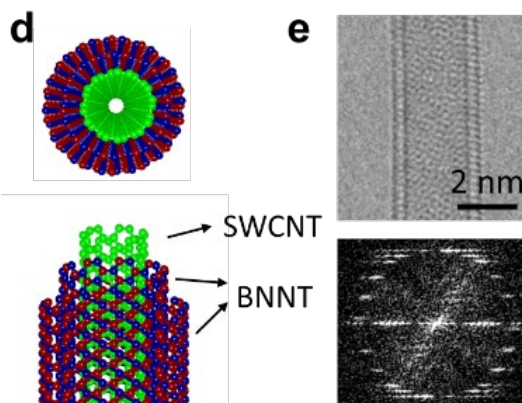
Originated Helical Preference By Harutyunyan



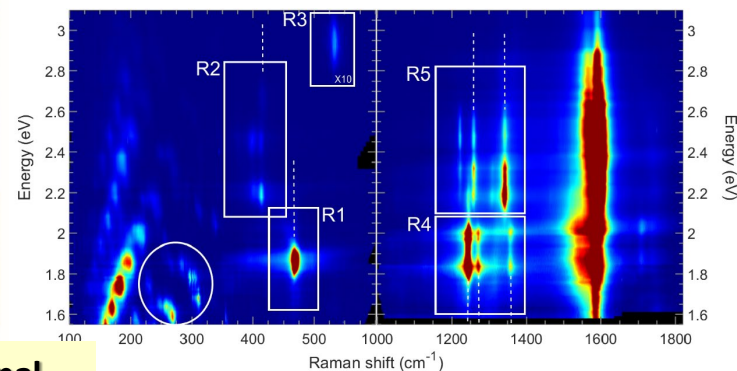
h-BN/CNT Coaxial Wire Working at 1500 °C in Air, By K-L Jiang



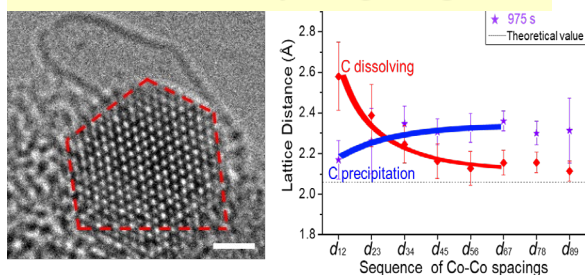
SWCNT-BNNT one-dimensional vdW heterostructure, by R Xiang



Nanocarbon Structures Synthesized in the One-Dimensional Core of Carbon Nanotubes: Wavelength-Dependent Raman Spectroscopy, by Wenseleers



In situ Study on CNT Growth from Co, by Feng Yang

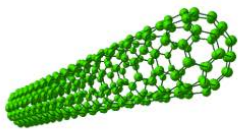


J. A. Fagan Nanoscale Adv. 2019 ASAP DOI:10.1039/c9na00280d

Aqueous two-polymer phase extraction of single-wall carbon nanotubes using surfactants†

Jeffrey A. Fagan *

This review details the current state of the art in aqueous two-phase extraction (ATPE) based separations of surfactant dispersed single-wall carbon nanotubes by their chemical species, *i.e.*, (n,m) structure, semiconducting or metallic nature, and enantiomeric handedness. Discussions of the factors affecting each separation, including workflow effects, variations of different surfactant and nanotube materials, and the underlying physical mechanism are presented. Lastly an outlook on the applications of ATPE at bench scale and implementation to larger scales is discussed, along with identification of research directions that could further support ATPE development.



International Conference on Science and Application of Nanotubes and Low-Dimensional Materials



Group Photo
Abst Book

July 10-16,
University
Cambridge,

NT11 Sun
S. Dresse



Group Photo
Program
Conf Book

Federal University
Gerais - UFMG, Bel
Brazil

NT17 in honor
Dresselhaus
Tribute to Millie t



Group Photo
Program
Abst Book

August 7-13, 2016
University of Vien
Austria

NT16 Summary
Loiseau



Group Photo
Abst Book

June 27-Ju
Hilton Bor
Canada

Tutorial by A

NT10 Sun
S. Dresse



Group Photo
Program
Abst Book

June 29-July 3, 20
Nagoya University
Japan

NT15 Summary
S. Dresselhaus



Group Photo
Program
Abst Book

June 2-6, 2014
University of Southe
Los Angeles, Californ

NT14 Summary
S. Dresselhaus



Group Photo
Abst Book

June 21-26
Tsinghua
China

NT09 Sun
S. Dresse



Group Photo
Abst Book

June 24-28, 2013
Aalto University, Esp

NT13 Summary by Mildred
S. Dresselhaus



Group Photo
Program
Abst Book

June 29 - J
Le Corum, M

NT08 Sun
S. Dresse



Group photo
Program

June 24-29, 2013
Brisbane Convention & Exhibition
Centre, Brisbane, Australia

NT12 Summary

Home Page

Previous NT
Conferences

NT Conference
Summaries

NT Conference
Vision

NT Conference
Charter

Steering
Committee
Statutes

Steering
Committee
Members

Advisory Board
Members

Keynote and
Invited Speakers

This page was
originally developed
by Prof. David
Tomanek at Michigan

- University, Finland)
- Pertti Hakonen (Aalto University, Finland)

- Ying Chen (Deakin University)
- Gordon Wallace (University of Wollongong)
- Max Lu (University of Queensland)
- Anita Hill (CSIRO)
- John Zhu (UQ)
- Stephen Hawkins (CSIRO)

Previous and Coming NT Conferences (HP, Group Photo, Summary, Book of Abstracts et al.)



May 31-June 6, 2020
Rice University, Houston, Texas, USA

- Matteo Pasquali (Rice University)
- Junichiro Kono (Rice University)
- Bruce Weisman (Rice University)
- Angel Marti (Rice University)
- Glen Irvin (Rice University)



July 21-26, 2019
Congress Center, Würzburg, Germany

- Tobias Hertel (U-Würzburg)
- Andreas Hirsch (U-Erlangen)
- Ralph Krupke (KIT/TU-Darmstadt)
- Jana Zaumseil (U-Heidelberg)



July 15-20, 2018
Peking University, Beijing, China
NT18 Summary by Shigeo Maruyama

- Yan Li (Peking University)
- Jin Zhang (Peking University)
- Hui-Ming Cheng (Inst. Metal Research)