

GDR-NAME Newsletter

may, 2021

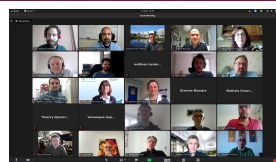


EDITO

The GDR NAME community has gathered virtually during the plenary session from 19th to 21st of may 2021. It has been a great success, since up to 150 people were connected at the same time!

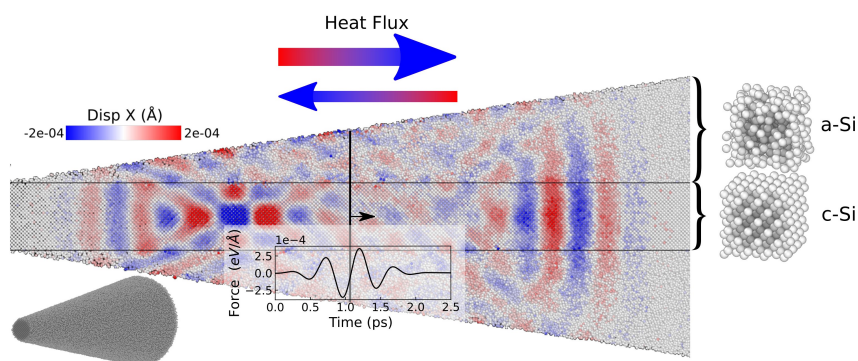
Reports on the six various ateliers/workshops show the wide variety of research subjects developed by the various teams of the GDR. That diversity has been also highlighted during the presentation of the lab partners of the GDR. It will help to promote, share and discuss scientific themes and technical developments across the disciplines at the core of Nanomaterials for Energy.

The steering committee would like to thank all the participants and especially the person in charge of each atelier! They have all done a tremendous job that benefits the entire community.



[LINK](#)

IMAGE OF THE MONTH

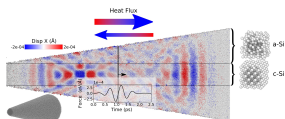


Thermal rectification in an amorphous-crystalline nanostructure

Wave packet propagation simulations and non-equilibrium molecular dynamics show a direction dependent thermal transport in simple asymmetric silicon core-shell nanowires. For more information, read the scientific highlight !!

[LINK](#)

Scientific highlights



Thermal rectification in an amorphous-crystalline nanostructure

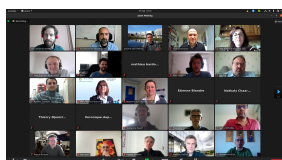
"Thermal rectification using a new strategy of nanostructuration has been assessed with nonequilibrium molecular dynamics and wave packets propagation simulations. The asymmetric crystalline-core/amorphous-conical-shell nanowires create a direction-dependent thermal conductivity due to variable axial and radial phonon propagation/confinement. This effect is related to the combination of a crystalline/amorphous interface parallel to the heat flux, together with the variable amount of amorphous coating due to the conical shell of the nanowire.

Paul Desmarchelier, Anne Tanguy, and Konstantinos Termentzidis Phys. Rev. B 103, 014202 – Published 21 January 2021

[LINK](#)

GDR-NAME NEWS

GDR-NAME virtual Plenary meeting



Virtual Plenary session on Zoom

The virtual plenary meeting has been held from 19 to 21st of May 2021.

The program was involving restitution of each ateliers along with GDR partner laboratory presentations; a nice step towards the preparation of the White Paper of the GDR.

The two 2021 PhD thesis prizes have been awarded as well as round tables by axis and themes of the GDR.

[LINK](#)

Next GDR-NAME Plenary meeting in Paris !



Plenary session at ESIEE, **book the new dates** 4-5-6 of october 2021

The next plenary meeting is programmed for the 4-6 october 2021 (midday of 4th to midday 6th of october). The meeting will take place in Paris, at ESIEE (Marne-la-Vallée). The precise modalities and the site-web of registration will be communicated to you before the 15th of july. The meeting is free of charge for all members of the GDR, but registration will be mandatory.

The preliminary programme of the plenary meeting includes presentations of the 2021 PhD thesis awards, selected scientific presentations as well as round tables by axis and themes of the GDR.

[LINK](#)

White Paper : Organization of six workshops

Six workshops on related subjects to the Nanomaterials for Energy

The next step after the Atelier is to start writing the white paper, instruction will follow !



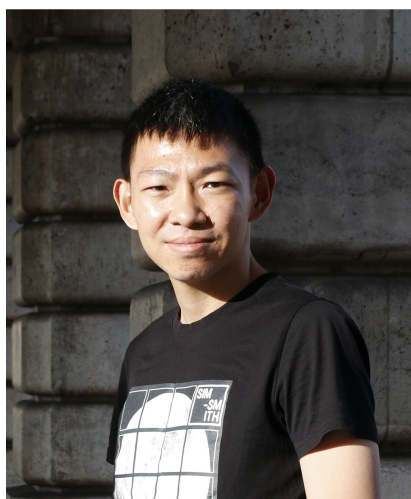
1. **Nanomaterials-Nanostructuration** (contact person: Severine Gomes, severine.gomes@insa-lyon.fr)
2. **Transport properties at nanoscale** (contact person: Valentina Giordano, valentina.giordano@univ-lyon1.fr)
3. **Energy Conversion** (contact person: Romain Bachelet, romain.bachelet@ec-lyon.fr)
4. **Thermal and Energy Management** (contact person: Younes Ezzahri, younes.ezzahri@univ-poitiers.fr)
5. **Energy Storage** (contact person: Thierry Brousse, thierry.brousse@univ-nantes.fr)
6. **Micro-Nano-Devices** (contact person: Philippe Basset, philippe.basset@esiee.fr)

The idea is to paint a complete state of the art on the priority themes of the GDR at the beginning of its existence. A restitution is planned during the plenary meeting of the GDR in may. The drafting of a White Paper will follow during fall 2021.

We deeply thank all the participants !!

GDR-NAME THESIS PRIZES

2021 GDR NAME thesis prizes: congratulations to the two laureates !



**2021 Best PhD Thesis Award,
Prize #1 Zhelu HU (LPEM,
ESPCI Paris)**

Investigations Towards More Performing and More Stable Solution-Processed Hybrid Perovskite Solar Cells (hu.zhelu@espci.fr)

Up to now, the certified power conversion efficiency (PCE) of state-of-the-art single-junction perovskite solar cells has exceeded 25%, suggesting their great potential to compete with silicon solar cells. Despite the excellent efficiency achieved and the advantages in solution-processed fabrication, important steps are still needed for perovskite solar cells (PSCs) to reach industrialization and large-scale application. Fundamental research in perovskite solar cells is thus necessary in order to fully understand their photovoltaic properties, and the impact of transport layer, the active layer, and the interfaces on device properties and stability.

[LINK](#)



**2021 Best PhD Thesis Award,
Prize #2 Giulia LOMBARDI
(INSA, Lyon)**

Unified nonlinear electrical interfaces for hybrid piezoelectric-electromagnetic small-scale harvesting systems (giulia.lombardi@insa-lyon.fr)

Recent advances in wireless communication techniques, the miniaturization of microprocessors and the improvement of measurement techniques have led to the spread of autonomous sensor networks that communicate wirelessly.

One of the main constraints when designing a system able to power small sensor nodes is its compactness: in most of the cases, a miniaturization of the transducing system involved in the process of energy conversion leads to lower mechanical couplings and, therefore, lower output power.

[LINK](#)

ANNOUNCEMENTS

Events, Conferences, workshop etc...!!!



JNRSE 2021
CEA Grenoble, 2-3 June 2021
10th National Days on Energy Harvesting and Storage



National days on Energy harvesting and Storage will be held in Grenoble 2-3 June 2021, late abstract deadline 18/04/21


These days aim to bring together researchers working on the conversion, recovery and storage of energy, in particular on a small scale, as well as on the design of complete energy-autonomous systems. Invited conferences by French and foreign researchers, experts in these fields, bring an international character to the conference (all presentations will be in English)...

[LINK](#)

Virtual Conference on Thermoelectrics

July 20-22, 2021

An online event to highlight the work of early-career researchers in the thermoelectrics community



Virtual Conference on Thermoelectrics, July 20 – 22, 2021 using Zoom platform, Submission Deadline: June 1, 2021

we are organizing the 2021 edition of the Virtual Conference on Thermoelectrics (VCT2021)! The goal of VCT is to provide early-career researchers a platform to share their latest work with the international thermoelectrics community. The event is endorsed by the International Thermoelectrics Society (www.its.org). The meeting will be held online from July 20 – 22, 2021 using the Zoom platform.

To give visibility to early career researchers, the call for oral contributions is restricted to students and postdocs. The call for abstracts is now open. Please visit the link above to submit an abstract. The abstract submission deadline is June 1, 2021.

Poster contributions will be open to all participants and held via Twitter (VCT2021 hashtags will be provided in advance). In addition, there will be plenary talks by prominent scientists in thermoelectrics. Please watch this space for the latest announcements.

Attendance will be open to anyone who registers for the event. We do not anticipate any registration fee.

[LINK](#)



20th International Metrology Congress CIM2021, Lyon, France

Energy harvesting from renewable sources (solar, heat and movement) is a prominent solution to create small amounts of electrical energy in areas of difficult access, and energy harvesting devices have much potential to address our world energy problems. Nanowire (NW) based energy harvesting systems have achieved encouraging progress, but due to nanometre dimensions of the wires and large size up to m2 of the devices, they also bring challenges for testing and characterisation. Average properties of energy harvesting devices can be measured, but a quantitative link and correlation between the performance of single NWs and that of the overall device is lacking. This project aims to develop reliable and high throughput metrology for the quality control of NW energy harvesting systems.

[LINK](#)



17ième Journées de la Matière Condensée JMC17: 24-27 August @ Rennes/VIRTUAL

Since 1988, the Condensed Matter Days (JMC) have been organized every even year by the Condensed Matter Physics Division of the Société Française de Physique. The topics cover all areas related to condensed matter, from concepts to applications and often interfaces with other disciplines. The success of these days makes it the largest national congress of condensed matter physics in France with more than 500 participants. The Rennes Institute of Physics, the Rennes Institute of Chemical Sciences, the Civil Engineering and Mechanical Engineering Laboratory, the FOTON Institute and the Rennes Institute of Electronics and Telecommunications are mobilized so that the JMCs originally planned in Rennes are a great success. As in every edition, we are counting on the Matière Condensée community to offer and host mini-conferences which represent a wide range of the richness of its themes.

[LINK](#)



GDR-NAME Plenary Meeting, 4-6/10/21, Paris

The Plenary Meeting will be held at ESIEE from the 4th to the 6th of October, 2021 at Noisy-le-Grand, please reserve the date now ! Scientific presentation, restitution of the working group on the White Book, laboratory presentation and much more, good food, good wine ...new contacts guaranteed !

[LINK](#)



1st Japan-France Virtual Workshop on Thermoelectrics

Thermoelectricity is a historically important scientific subject both in Japan and in France, encompassing research fields from fundamental theory and computational modeling to material optimization, mechanical testing, device engineering and large-scale application developments. The 1st Japan-France Virtual Workshop on Thermoelectrics will allow researchers from both countries to discuss and share their findings despite the global health situation and traveling regulations. The virtual meeting will be supported by the Gather.Town platform, a particularly functional and interactive virtual place that allows participants to exchange easily via a game-like interface, including seamless one-to-one and group conversations, poster sessions and dedicated conference rooms powered by Zoom. This platform will thus be well suited for oral contributions as well as poster sessions, including poster prizes awarded by a scientific committee.

Deadline for abstract submission: July, 9th 2021 and Deadline for registration: August, 27th 2021,

[LINK](#)



POSTPONED NEW DATES !! C'NANO meeting, 23-25/11/21, Toulouse

For the fourth consecutive year, the French national Competency Cluster in Nanoscience of CNRS, C'Nano, organizes its annual international meeting in nanoscience.

C'Nano 2020 The Nanoscience meeting aims at gathering the scientific communities in nanoscience and nanotechnology, and will take place in Occitanie region (France) at the Pierre Baudis Congress Center in Toulouse from 23rd to the 25th of November 2021.

Last minute information: the conference has been postponed for the second time, please check the website for more!

[LINK](#)

La culture revient !! Cinémas, musées et salles de concert réouvrent, profitez en !!!

You have received this email because you have subscribed to the GDR mailing list.

Don't forget to submit your announcements, proposals for highlights, image of the month, information of all types... Thank you!

