



DEPARTMENT OF APPLIED PHYSICS

MARCH/APRIL - NEWSLETTER

For many of us 2021 was the year when the pandemic would end, and we would be able to get back to normal. The promise of vaccines lingered at the horizon at the end of last year but sadly, the return to normal still seems far away and we need to keep working from home, meet through zoom, remember to keep social distancing and limit presence in our labs.

The situation is different for all of us, some are living alone with limited or no social network while some are spending extended amounts of time with spouses and kids. In all this, it is important that we do our best to remain understanding and forgiving. Minor issues that are usually settled by simply meeting and chatting at work can now easily grow out of proportion and the usually courteous and friendly tone in email exchanges too often start to resemble the unpleasant tone often encountered in internet fora. So, a gentle reminder to all of us, myself included, to stay friendly and courteous in our exchanges with colleagues throughout KTH as well as elsewhere.

During the last few weeks, Nordita has been moving into the Nova building. Yes, we have unofficially started to use the AlbaNova naming convention that the new AlbaNova director Mats Wallin has suggested. Alba signifies the old building and Nova the new building. In the Nova building we thus now have new neighbors, and I would like to extend a warm welcome to them! If you happen to spot easter eggs around it is most likely thanks to our Nordita colleagues.

With the deadline for VRs project call coming up, I know that many of you are busy with working on your proposals. The concerted effort that we all put into writing proposals for VR is as large as it is important since VR is one of the biggest external funding contributors to our research (~25%). For those of you who are writing this year I would like to encourage you to reach out to colleagues for input and comments, and for those of you who are lucky enough to already have a grant, please share your wisdom and lend a helping hand.

With that I wish you all good luck, good health, and a happy Easter!

Oscar Tjernberg
Head of Department



APPLICATIONS FOR SWEDISH RESEARCH COUNCIL (VR) GRANTS

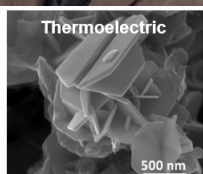
April 13th is the last day to send applications for starting and project grants from Swedish Research council (VR). Letters of support which are to be signed by Head of Department needs to be sent to prefekt@aphys.kth.se latest **April 9th**. On the Aphys internal pages you can find a template with all information needed to Head of Department, send the complete letter of support and it will be signed as soon as possible.

Good luck to all who are applying!

RESEARCH AT APPLIED PHYSICS: NANOCHEMISTRY GROUP



Nanochemistry is one of the activities within BIOX. The group is led by Prof Muhammet Toprak, who is specialized in Inorganic Materials Chemistry. Material design on the nanoscale is the main research domain. The focus is on developing sustainable methods (green chemistry) for synthesizing nanoparticles with controlled size, morphology and surface chemistry (nanotectonics), precisely engineered for the intended applications. The group uses a wide range of analytical techniques for structural, microstructural, physicochemical and interface characterization, to reveal the materials' qualities in relation to the process used. Muhammet and his group are also responsible for several key courses within the international master program on nanotechnology, with focus on chemistry, nanomaterials and nanocharacterization.



Research activities have a strong sustainability focus, with special emphasis on applications in energy and biomedicine. Thermoelectric materials is one area where Muhammet's group has a strong track-record, reporting several materials displaying state-of-the-art performance. The aim is scalable hybrid films for thermal energy harvesting. For biomedicine, nanoparticles with biocidal and bio-active surfaces have been developed. A pioneering area is the development of a library of novel nanoparticle-based contrast agents. Together with the bio-imaging expertise in BIOX, the group has demonstrated the usability of the new contrast agents for in-vivo x-ray fluorescence bio-imaging. Development of targeted nanoparticle delivery in-vivo is the objective of on-going research.

NEW ASSOCIATE PROFESSOR AT APPLIED PHYSICS: ALI ELSHAARI

Congratulations Ali! How does it feel to be the newest Faculty member at Applied Physics?

I am very excited to join the illustrious Applied Physics department at KTH. My research focuses on both fundamental questions and applications in the field of optical science and quantum technologies. I am also very thrilled to continue my teaching at KTH and expand it, my goal is to inspire a new wave of engineers and physicists that will have positive impact on our society and the world



GÖRAN GUSTAFSSON PRIZE TO APPLIED PHYSICS

Alexander Edström and Maciej Dendzik, post doc and researcher, at Materials- and Nano Physics have received the large and small Göran Gustafssons prize for young researchers. Congratulations!

UPCOMING EVENTS AND DEADLINES AT THE DEPARTMENT

PhD Thesis Defense

April 30th 10.00, Rabia Akan (Biomedical Physics and X-ray Physics)