

IFT-POSTEN

NYTT FRA INSTITUTT FOR FYSIKK
OG TEKNOLOGI
UNIVERSITETET I BERGEN



Department Head's Intro

We have had a nice and sunny week, and memories of storm from both East and West have managed to disappear. However, rumours have it that a new wave of storm is on its way. This shifts our thoughts, naturally, in the direction of UNESCO's year of light. Since perhaps not everybody is likely to make this connection, I will remind you that the first exploration of storm centre's movement had been inspired by the lunar eclipse which occurred on 21 October 1743.

Benjamin Franklin had at that point decided to become a gentleman. As many of you might have understood, becoming a physicist was at that time also considered as the best way of becoming a gentleman. As the lunar eclipse approached, he wanted to compare the event, as he himself experienced it in Philadelphia, with his brother's observations in Boston. His disappointment must therefore been great when a strong wind from the North-East brought with it clouds and rain which destroyed the visual effects. He took it for granted that his brother in Boston had experienced the same problems, just slightly earlier, since Boston lies in the direction of North-East. To his great surprise, the brother reported on good weather conditions during the lunar eclipse, but that at the aftermath of it, slightly unpleasant weather with wind followed, also from the North-East. Franklin could not stop thinking about this, so he started studying the storm centers' movements by following them on a horse. He deduced that a storm does not follow the course of the wind, which became a concept that to a large extent influenced the future of meteorology.

As most of you might already know, Franklin was also a pioneer of research around electricity, but perhaps fewer of you know that he was also the author of the concept DST. That appeared as early as 1784, but was not fully applied before the onset of World War I. This weekend it is only nine weeks before we again adjust our clocks to DST, and the evenings start getting lighter.

Thus, I believe it is obvious to you all why the Bergen weather should direct your thoughts toward a gentleman and a pioneer in electricity and optics, as well as to the year of light.

Otherwise, thanks to Bjarne on his answer to the last week's question about the blue hour. He also contributed with a new question: He wonders if anyone could tell him why aluminium pots cannot work on induction stoves?

With a little wisdom from the good old Franklin, I wish you all a great weekend,

Øyvind



Benjamin Franklin, portrayed by [David Martin](#), London, 1767.



Dalic model of induction oven/frying pan, Siemens, 2008.

***“Genius without
education is like
silver in the mine”***



Answer to the last week's IFT-quiz

Last week, we posed a question as to where does the term “the blue hour” come from. We have received two suggestions and are very satisfied with the answers, and the reward can be collected from Stine at the Expedition Office.

Bjarne Stugu says that “in the twilight we don't have direct sunlight, but just the light of the blue sky. That light is blue, since the sky is blue. I am attaching a photo with snow. The snow reflects all colours very well (that is why it looks white in sunlight). We can see here that all the reflected light in this picture is blue, approximately the same colour as the dark sky above.”

Børge Hamre deepens this with the following explanation: “Øyvind has truly been out and taken a photo during the blue hour right after sundown, It is a very exciting hour when everything turns [blue trolls come out of the mountain](#).”



In the optics environment, we agree with Bjarne in the sense that the fjord in the photo is coloured blue by the reflection from the blue sky. But one could go one step further and ask why the sky over the fjord is blue after the sun had gone down?

[Here are two hypotheses on why the blue colour, and thus the blue hour, appears.](#) It is tempting to go for the blueberry option, if one has to choose between the two.

Hypothesis 3: The problem is that with the sundown, the blue light should have been spread about on its long way through the atmosphere, so that the light which reaches down to the sky above us would include a lot of red, cf. the red sundown, and when that red-dominated light gets spread over the hill, from the molecules which spread the most due to their short wavelengths, it should have in fact resulted in a white-greyish colour! But the fjord in the photo is in any case not white-greyish. The solution to this problem is to add the factor of the ozone layer. The

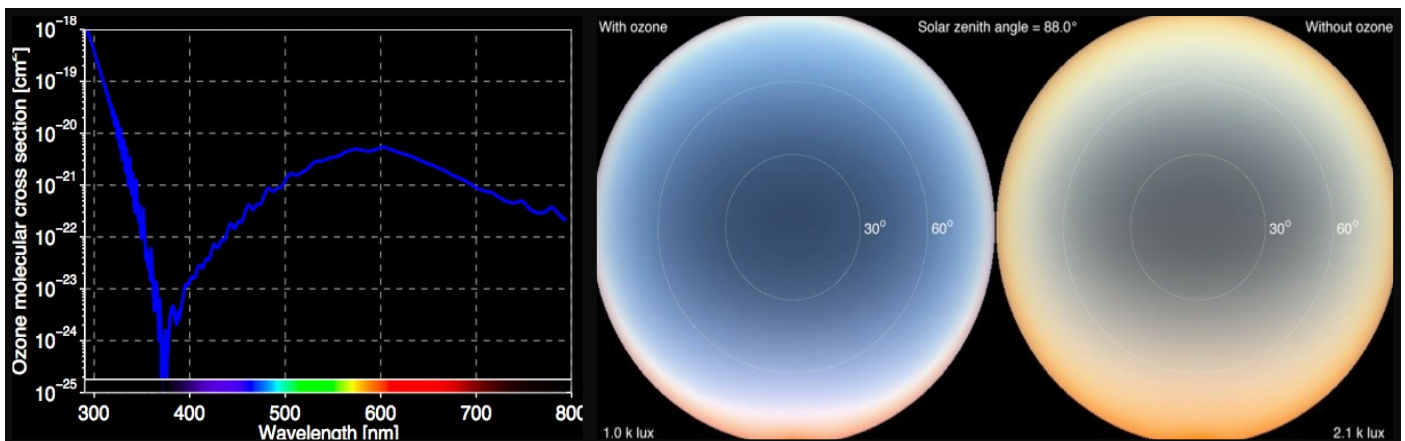


Fig. 1 and fig. 2. Click on the pictures in order to see them in a bigger formate.

ozone does not only absorb the UV-rays, but also the red light (figure 1), and when the sun is very low in the sky (or right behind the horizon), it seems as if the absorption of light with the long wavelengths dominates over the light with short wavelength which had dispersed along its way, thus making the sky above us appear blue due to the effects of the ozone layer. This blue light hypothesis is supported by figure 2 which shows sundown simulated with and without the ozone layer.

IFT in the media

Earlier this week the department published a digital magazine, with Bergens Tidende's online issue. The magazine contains several articles which give profile to our department and the research conducted here, as well as outlining our study options. In case you have not read that in BT, you can read the [magazine here](#).

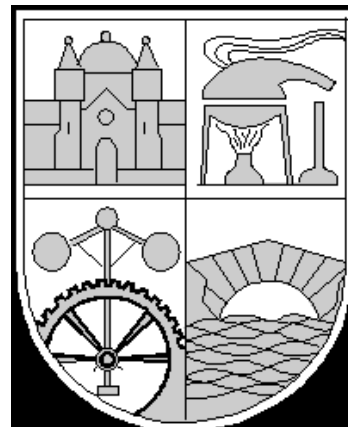


Arrangement

Norges Tekniske Vitenskapsakademi, NTVA, invites you all to a meeting in Bergen
Tuesday, February 10th, at 19:00 hrs
Nansensenteret at Marineholmen, Thormøhlens gate 47

Topic: The European Plate Observing System (EPOS)

With Kuvvet Atakan, Professor, Department of Bio-Science, University of Bergen
More information about this lecture is available from our [homepage](#).



Invitation to HSE-course for lab employees

UiB employees working in the lab are invited to a HSE-course in the spring of 2015. Course offer includes courses in both Norwegian and English.

Course offer (date, course, place):

09.02.15, 09:00-12:00 Registry of Chemicals (ECOonline) Level 1. Stein Rokkans house
10.02.15, 09:00-12:00 Registry of Chemicals (ECOonline) Level 2. Stein Rokkans house
18.02.15, 09:00-15:00 First Aid in the Lab, C. G. Sundts house
18.02.15, 09:00-11:00 Gloves Security Course, BB-building
06.03.15, 09:00-15:00 First Aid at the Lab, C. G. Sundts house, ENGLISH
11.03.15, 09:00-15:00 HSE at the Laboratory for New Employees, C. G. Sundts house, ENGLISH
25.03.15, 10:00-12:00 Introduction to the Exposal Registry, Høyteknologisenteret
26.03.15, 10:00-12:00 Introduction to the Exposal Registry, BB-building

More information about the various courses and registration is available at the [HSE-portal](#) and [HSE-gateway](#).

Registration deadline: **Friday, February 6th.**

All questions can be directed to the HSE-section: post@hms.uib.no/ phone: 55 58 20 54.

Special Offer for the UiB employees

Skiing daycards at the Eikedalen Ski Centre

The Special Offer Committee has bought a number of skiing daycards at the [Eikedalen skisenter](#).

Prices:

Adults 16 yr+ Day pass kr. 270,- (ord. 320,-)
max. 2 pr/person.

Kids 7-15 yr Day pass kr. 210,- (ord. 260,-)
max. 2 pr/person.

All inquiry should be addressed to post@poa.uib.no and passes can be collected at the Office located at Christiesgt 18, 4th floor.

The ski pass cost will then be deducted from your salary.

Best regards,

Special Offer Committee



No longer at IFT? Would you like to continue receiving IFT-posten?

If you would like to continue receiving IFT-posten after completing your studies or work contract at IFT, or you know someone who would like to be on our mailing list, feel free to send an e-mail to ift-posten@ift.uib.no.



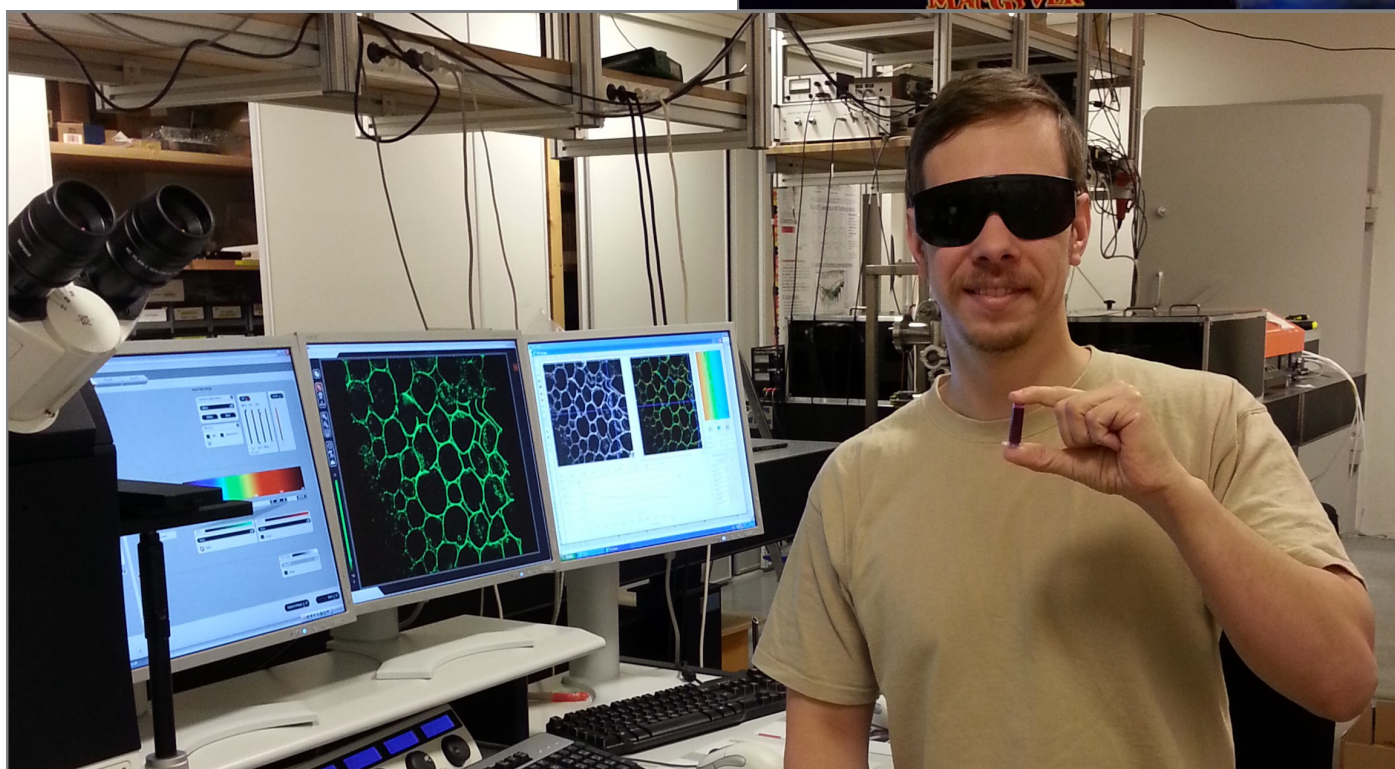
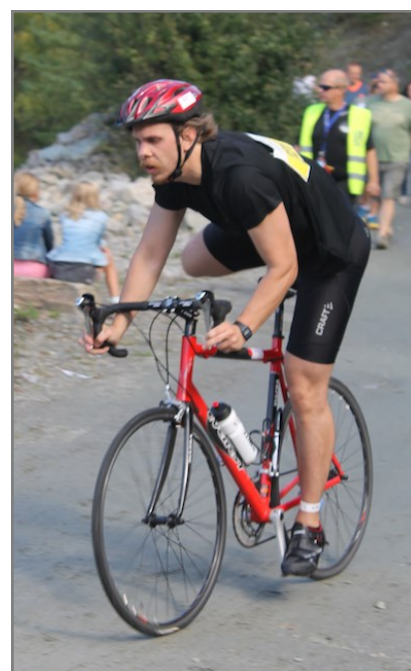
The PhD Research Assistant

Arne Skodvin Kristoffersen Atomic Physics and Optics Supervised by Øyvind Frette

I am a 32-year old man from Klokkarvik, Sotra island. My interest for physics appeared in fact quite late in life. When I left for Trondheim in order to enroll in the studies at NTNU, at the beginning of the millennium, I started off by taking subjects in American literature. Luckily, I soon changed my mind, and after a while ended up with a Bachelor in physics. I did my Master's degree here in Bergen, in atomic physics and optics. After that I spent almost four years at the Norwegian Naval Academy at Laksevåg, where I taught the cadets mathematics and physics. In August 2012 I got a PhD scholarship at IFT – in the same research group with which I did my Master thesis, and with the same supervisor.

My PhD work is experimental, and the key words are laser and microscope. To put it more precisely, I measure the fluorescence-lifetime in living cells, something that in the future might lead to a better understanding of Photosynthesis, and from that point, the imagination will be our only limit.

Outside work, I spend a lot of time on training and chess. I work on my strength and muscles in order to keep the old backaches under control, and I also go swimming, jogging and cycling in order to be able to join the various competitions. [Knarvikmila](#) is for me a regular annual event, and my next marathon will be the [Bergen City halvmaraton](#). But the most fun of all is the combination of all three disciplines, i.e. triathlon. I am also a very eager hobby chess player, and can brag that I have played (and lost) against Magnus Carlsen (a Norwegian grand champion - ed.) In addition, I have had several more or less [fortunate TV appearances](#).



Publications

- Taskjelle, Torbjorn; Barthel, Knut; Gammelsrod, Tor; et al.: *Modelling alongshore flow in a semi-enclosed lagoon strongly forced by tides and waves* ESTUARINE COASTAL AND SHELF SCIENCE Volume: 149 Pages: 294-301

Photo Of the Week



"The Blue Hour". By Bjarne Stugu, at Kvamskogen right before christmas. Click on the picture to see it at a larger scale.



H-bar is open every Friday from 19.00 - 01.00.

On Tuesdays, every even-numbered week, there are organized pub-lectures at H-bar.

More info at H-bar's [facebook page](#).





Nyttige lenker

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[Det sentrale organisasjonsutviklingsprosjektet](#)

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 Nettavisen [På Høyden](#)
 Fagutvalget ved IFT: <http://fft.uib.no/> / [Facebook](#)

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[Bjørn Trumpy, 1900 - 1974](#)



[Bjørn Trumpys hus](#)



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