

Edition 15-1

Periodical of S.A. Astatine

December

2020

ATTENTIS

Sporty Snacks
Annelies



Introducing
The new board

Making Art
With Alina

ASTATINE

Colophon

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Contents

04	From The Board
	Smilla Staps
05	Introducing
	The 16 th Board
08	Introducing
	New Study Advisors
10	Monsters Vs. Math
	Sander de Ridder
14	Scribble Page
	New Members
16	Moving Astatine
	Ward Huijskes
18	Astatiny
20	Active Members Activity
	Tom Veldman

IT'S ALIVE!

22	Art at Home
	Alina von dem Bussche
26	Photo Page
	Holiday Edition
28	Sporty Snacks
	Annelies Klaassen
32	Advertorial
	ASML
34	Puzzle
	Ruben van Asselt
35	Cheerful Chef
	Alina von dem Bussche
36	Advertorial
	ETC

Editorial

Hey there!

Have you guys ever made plans to do something, and then totally fail to do so? Well, what you are holding now is the result of me doing so.¹ I guess it is tradition now too, since the previous two years where I was editor in chief of the ATTentie the first edition was also hella late. I guess I always overestimate just how bad my life is in disorder when going into the summer, despite not even quite having one this year. My thesis got delayed, thanks Corona, pushed to the summer and I am still trying to finish it haha. But I will not drag you guys any further into my depression, I'll go be sad on my own.

So this edition has a lot of new things (which are not quite new anymore since -you know- it's late). New study advisors, a new board, new member scribbles, you name it. Also some regular articles and since there are very few photos, I bribed some people to use their holiday pictures.

You can read this and more shady tactics (maybe) in this edition! I will not make any promises but we will try our hardest to have the next edition actually out in time.

See ya in due time
Sander de Ridder
Editor in Chief

¹ Ruben van Asselt agrees with this statement from personal experience

10



From The Board

Smilla Steps

The summer holiday has ended and everyone is ready to start the new college year. The last months as a board we have not been idle. As you might have noticed already, Astatine has moved to the third floor of Carré. For all the new readers over here, Astatine used to be located on the 7th floor of the Horst. Now we are super close to our beloved associations Alembic and Arago, and the TAP is only two stairs away.

We ended the year with the online ALA, for which we can hopefully do the free-drinks part somewhere this year, and a Lustrum announcement pubquiz. There were new hoodies and socks designed and you should have gotten a nice sleeve for your drawing tablet at this point.

Sadly the corona crisis did not go on holiday. The Kick-In, one of the most memorable events for many of you, had to take place mostly online. Luckily the Kitcat worked their asses off and made it an

awesome time for the first years. The egg protection game, an online GTKYAG and acculturation game took place. Also the Kitcat brought around food, so the kiddos still experienced the traditional BBQ on Tuesdays.

Now the new academic year has started and the end of our board year is nearby, I want to thank everyone that has made our year as awesome as it was. Without the committees organising activities and people hanging around Astatine, our board year would have been much less awesome. Thursday 3 september is the last day we could call ourselves board. I want to wish good luck to our successors and I know they will keep the association awesome and alive.

On behalf of the 15th board of S.A. Astatine,

Op de hoogste!
Smilla

Introducing

The 16th Board

Jan den Uijl

Hello everyone, I'm Jan den Uijl and this year I will be fulfilling the role of chairman of our beautiful study association. I am really excited to see what new experiences this year will bring and how doing a board year will affect me as a person. Personally I hope that I will end this year with a better sense of responsibility and an overall more structured lifestyle. Something that I think is more ambitious than it might seem. For the association I hope that I will be able to better involve members, both in the decision making and in their feeling of attachment to Astatine. I want members to feel like Astatine is a second home to them. A place at the university where they can come to relax and have fun, but also where they can come with their questions and where they feel welcomed.

A big life goal of mine is that I want to bring with me this board year is making people happy, and if by the end of my

time as chairman of Astatine people feel like I have contributed to their overall happiness this year, I would consider my board year very successful.

I probably won't have to tell you that this is and will be a very weird year for Astatine due to the ongoing pandemic. This of course means that a lot of fun things and events can't take place in their usual way. Now unfortunate as this may look, it is actually quite a unique experience, not only for Astatine as an association but also for us as a board. We have to tackle problems that did not exist before and guide our beloved association through this crisis. We are doing our very best to make sure all members still get to enjoy their wonderful time at Astatine to their fullest and so far I would say that we're doing a good job.

On behalf of the 16th board of S.A. Astatine I would like to say:

Stay safe and keep smiling,
Op de Hoogste!



Timon Smit

Aloha, my name is Timon Smit at the moment of writing this I'm still a young boy of 22. This year I will be fulfilling the role of Secretary of our lovely study association. I am living in the beautiful green city of Hengelo for about 2 weeks now but it feels like my whole life. I originally come from the quaint village of Volendam on the other side of the country. I have had about 10 different jobs and even studied at the HBO in Amsterdam for a bit. My grandpa was the first man to score a goal in the dutch paid football. Furthermore, I don't really like football, I am more of a climbing person. My whole life I wanted to be a freerunner but this was too much effort for me so I stuck with bouldering. Bouldering is basically just freerunning without the exhausting running from place to place in between. I have a passion for food and cooking in all shapes and sizes. Cleaning relaxes me which basically sums up to me being the perfect househusband. When I came to live in Enschede for the first time I was taken in by board members of Astatine and Daedalus, and a random german who is also quite cool. These people in my eyes were heroes. Keeping a whole association on your shoulders while looking cool. Seeing them go through life with such swagger every day, those were some amazing times. Ever since I saw those two in board suits at their cobos I knew I wanted to be a board member too. The board members of Astatine have always been like friendly landlords helping out with your problems and sometimes coming over unexpectedly to always liven up the party. For me the biggest part of my board year

is seeing how I deal with stress. Coming from a second study year, in which I did not do a lot, to now combining studying, board, day job and a relationship. The stress has definitely increased this year but is very much still manageable. On behalf of the 16th board of S.A. Astatine I would like to say: Keep shielded and stay happy Op de Hoogste!

Jenny Agerbeek

Heyo, my name is Jenny Agerbeek. My home-home is in the beautiful Brabant, it might take a while to get there from here but it is definitely worth to see the Brabantse gezelligheid every now and then.

As I had no idea what to write here, I asked people to describe me, this mostly resulted in "super hyped en enthusiastic". I am representing the girls on this board, for example did you know that there is free stuff for when you have your period in the boardroom if you happen to forget to bring it?

You might ask yourself "hey what kind of important board stuff are you doing all day long?" Well I am fulfilling the function of External Affairs and the function of Internal Affairs. This means I am quite busy all day but it also means that a party here and there are necessary to survive and music is a definite must. I live by the knowledge that happy socks make a happy person, thus whenever you see me I am almost always wearing happy socks. Before I was board I was super active at Astatine, the committees I have done are NiCAT, OuCie, LoA, CupiCo, ComCon and of course the BOSS. Next to being very active at Astatine I



also like to spend a fair amount of time at my student association Taste, here I have my lovely yearclub with whom I like to train my liver every Tuesday. As I happen to make my evenings pretty late, my mornings also start fairly late... oops, often not even hungover because as you have to know, just say "ik doe niet aan katers".

Houdoe, see you at Astatine ;) and ofcourse Op de hoogste!!

Stéphan Bosman

Hello there! I am Stéphan Bosman and this is my article for the ATtentie: Quick recap if you haven't read the previous edition, I am currently a 5th year AT, busy with finishing my bachelor besides my board year and I am from France. I used to be part of 4 Happy Feet, the dancing association on campus, but after 4 years of ballroom and latin dancing I decided I wanted to change a little, so I went back to badminton, which I did for 7 years back in high school. So even though I have to get used to it, it is very fun to pick it up again and use up all that energy stored during these last months

of a new and weird situation. About this situation, it has and will keep on influencing things a lot. Meaning it is hard to say what to expect from this year. Of course, if we look on the bright side, things will go back to normal and activities and drinks will be able to resume, but if we look on the opposite side, it might just as well be possible we go back to confinement and everything happening online, which is already nearly the case. Gladly Astatine is still open and we can still interact with our members, making our days so much better. But as the treasurer of the 16th board, it befalls under my responsibility to expect what kind of costs will be made, and in that point of view, this situation makes it extremely difficult, especially as we are in a lustrum year, people want things to happen, and for that, money is needed. However how am I to say how much money will come in and can be spent on what if everything is so unsure? So rough estimates it is! And of course with the support of my other board members and committees we will make sure that even though there are big uncertainties, this year will still be a success. Op de hoogste!! Stéphan

Introducing

The New Study Advisors

Hi there! We are Simone van Lin and Florian Lukkien and we would like to introduce ourselves.

My name is Simone van Lin, I am the new study advisor for the second and third year Bachelor students of Advanced Technology.

6 years ago I finished my Master's degree in Chemical Engineering (material science) at the University of Twente. I did a double master for a while (in Education and Communication, to get a teaching degree in chemistry) but I did not finish it. Instead, I started a PhD project in the group 'Physics of Complex fluids' (at the UT), which I finished a few months ago. I studied interaction forces in the first 5 nm from solid-liquid interfaces. These measurements are really sensitive, and really cool to be able to do.

My interests are quite broad: I love to read about evolution, genetics and environmental biology, but I really enjoy Russian and English literature as well. Besides reading, I enjoy being outdoors. I like to hike and photograph landscapes, I am fascinated by everything that nature has to offer, but especially like to observe and capture seasonal transitions.

I guess you can say that I love the UT so much, I simply cannot leave it :) I am really excited to start working as study advisor, and am looking forward to meeting you all soon!



Hey everyone! My name is Florian Lukkien and I am the new study advisor for the first year students of Advanced Technology. In addition to that, I am also the program coordinator and study advisor for the Nanotechnology master's program.



In 2014 I finished my Master's degree in Education and English Literature and Culture in the city of Groningen. Shortly after, I started teaching the English language in Hengelo and later on in Deventer. Besides teaching English, I also focused on helping students with their research projects and I was a mentor and coordinator too. As a mentor I assisted learners with time management and improving their academic skills and I talked to them about their personal or academic issues. As is evident by now, I don't have a technical background, but I have always been very eager to learn new things. Working for the AT and Nano programs will definitely be a challenge at first, but I am looking forward to learning everything there is to know about these two studies.

In my spare time I love to read English literature. I enjoy lots of genres, but I especially enjoy reading lots of historical books about the Tudor period and the Elizabethan age. I won't bore you with that right now, though :). Besides reading, I am fond of dancing (Zumba & ballroom/latin) and I like to travel as often as I can; the US is one of my absolute favourite destinations!

I am really excited to start working at the UT and I hope to see you soon

As you can see we both have very different academic backgrounds, but we feel that we complement each other very well. We are here to help you with various questions related to the program and we can support you with personal issues. Don't hesitate to contact us, our door is always open. We are looking forward to meeting you!

Monsters Vs. Math

Sander de Ridder

Think of a movie monster and remember the first image that pops up in your head. It should really be a *monster*, more of an animal than something conscious of itself. If I was clear enough, you are now hopefully thinking of something like Frankenstein -well, his monster - , Godzilla or Dracula. Maybe King Kong, something in the direction of those. Any classical movie monster will do. Now think of how realistic their physics are. Yeah, not very. For example, if Dracula's mass is conserved he would make for one heavy bat. If it is not, well then where does it go? Does it disappear? Let's take the average weight of a Romanian male, 83 kilogram. Now subtract the 1.1 kilogram of a Giant golden-crowned flying fox -which is not even technically a bat but is the heaviest mammal capable of flight. Applying $E = mc^2$ shows that by making 81.9 kilograms of mass disappear, 7.3 Exajoules (10^{18}) is released, about as much electricity as South Korea consumes in 5 years. That is a very crude (and perhaps very wrong) debunk of course. But I am in a mood to over analyse stuff, and delving into

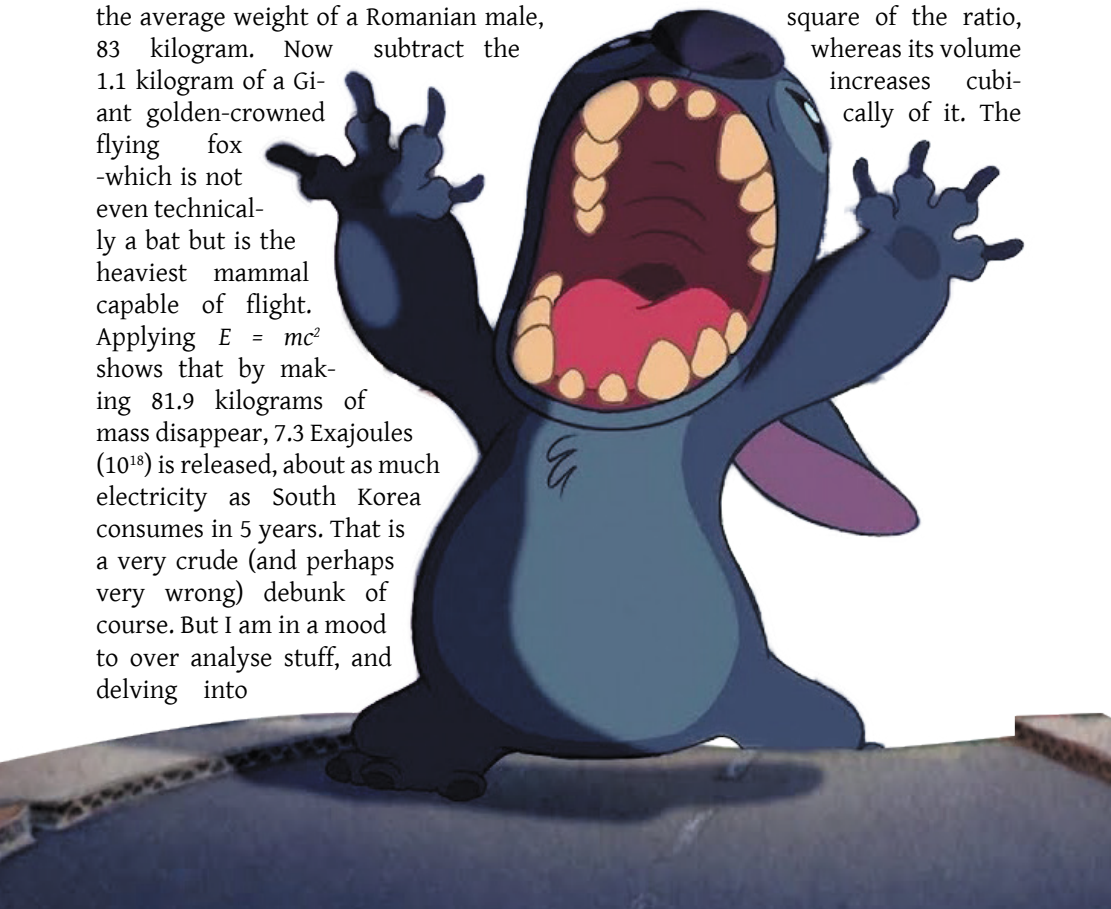
my own life choices is not good for my mental health, so let's kick this thought experiment up a notch.

First off, everyone's favourite movie lizard, Godzilla. Every decade or so he rises up from the sea, to destroy a bridge, or save some city, whichever he wants to I guess. It's a huge lizard, who's going to tell him no? Well, the square-cube law just might. For those unfamiliar with it, this mathematical principle, first described by Galileo, states that if some object undergoes a proportional increase in size, its area will grow with the square of the ratio, whereas its volume increases cubically of it. The

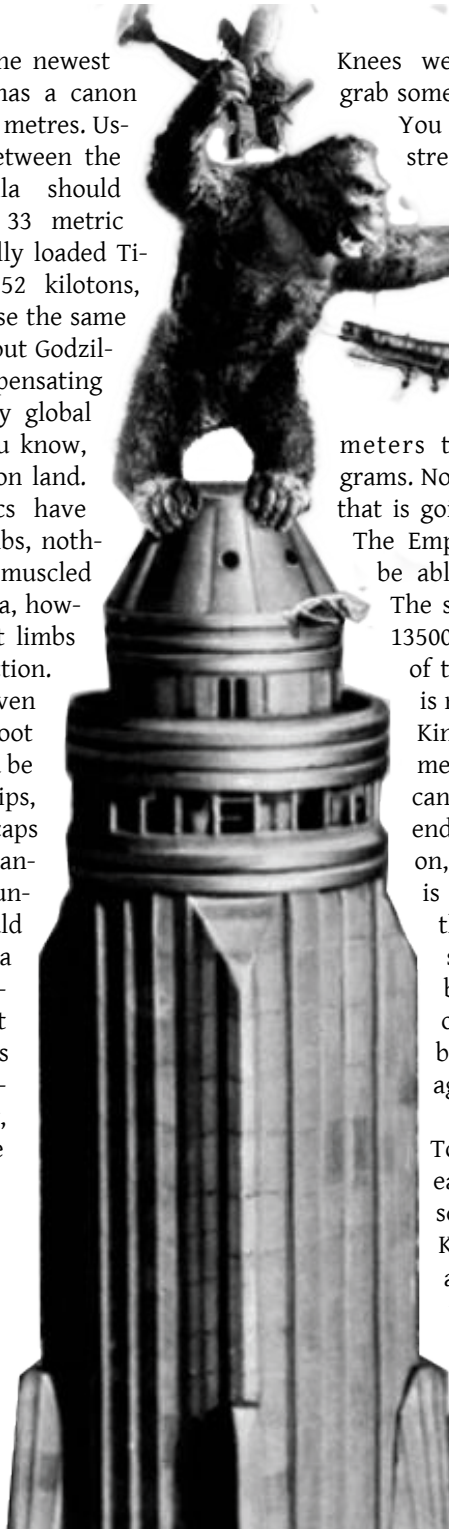
formulas are below on this page. Anyhow, for animals this means that if you were to scale a mouse to the size of an elephant, it would gain mass by a cubic ratio, but the cross section of its muscles would not scale accordingly. So any step this gigantic mouse takes would break its bones, if it could even move since he can neither breathe nor pump blood through its veins. This is also why small animals can survive falls from greater heights. You have to drop a squirrel from about 7000 kilometres so it starves to death while falling. The surface area of these animals is relatively small compared to their mass, making their terminal velocity low enough to be survivable.

No, we're not going to drop Godzilla from somewhere far out of the atmosphere. But looking at the bugger, he kind of looks like a crocodile, doesn't he? *Yes, I read up on the lore for the article and technically Godzilla is some nuclear remnant from the dinosaurs in most iterations but I kind of use that in the upcoming calculations.* Lucky for me, salt water crocodiles exist and it just so happens Godzilla also comes from the sea! Just like Godzilla, salt water crocodiles are not something you want touching your toes while swimming. They can survive on open seas, occasionally catch a shark and are, in contrast to their cousins, generally hostile towards humans. Fun times! Male specimens can grow up to 5.2 metres in length and weigh 1000

$$A_2 = A_1 \left(\frac{l_2}{l_1} \right)^2 \quad V_2 = V_1 \left(\frac{l_2}{l_1} \right)^3$$



kilograms. In the newest films, Godzilla has a canon length of 167.74 metres. Using the ratio between the lengths, Godzilla should weigh roughly 33 metric kilotons. The fully loaded Titanic weighed 52 kilotons, so we can just use the same iceberg to take out Godzilla, even compensating for shrinkage by global warming. Or you know, make him step on land. Salt water crocs have rather short limbs, nothing like those muscled calves of Godzilla, however those short limbs do actually function. If Godzilla even managed to set foot on land, it would be with broken hips, fractured kneecaps and shattered ankles. Maybe underwater he could grow this big, sea creatures can after all grow a lot larger than us landbound suckers, but honestly, I don't think the odds are in the favour of this nuclear salamander.



Knees weak? Arms heavy? Don't grab some spaghetti, grab a banana.

You will need that calcium to strengthen your bones. As does King Kong.

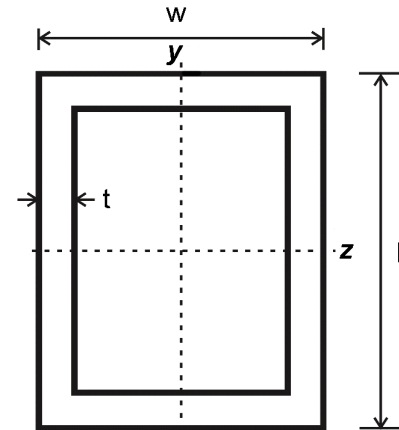
Even taking his original 6 metre height, according to the square-cube law he would weigh 8400 kilograms, if the original gorilla is 1.60 meters tall and weighs 160 kilograms. Not as much as Godzilla, but that is going to press on his knees.

The Empire State Building would be able to hold him, however. The skyscraper is built to hold 13500 humans. On the other end of the spectrum, the building is not as lucky, however. The King Kong that fights Godzilla measures 45 meters, so you can imagine where that will end. Now, before we move on, remember that King Kong is not just sitting on top of the building. He climbs it, swings at some airplanes, basically applying all kinds of forces on the top of the building. How would it fare against that?

To determine that, it is easiest to simplify the skyscraper to a simple beam. King Kong will be modelled as if applying his entire weight right at the top floor, making for a very simple beam structure. The cross section can



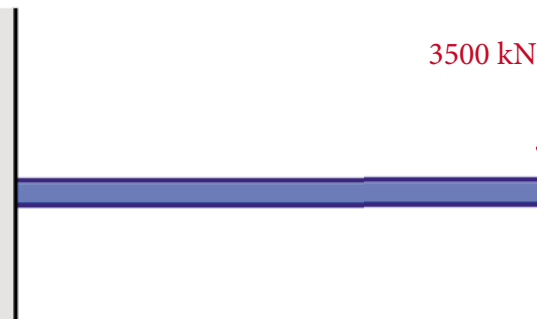
be considered to be a hollow rectangle. Also, since I am far from qualified in designing any type of building, this rectangle will be made entirely of steel. The actual building has a façade made of bricks and granite, however the actual load is carried by a number of giant steel columns. Since it has been grossly simplified already and I could only find the sizes of the base (129.2 by 57 meters), I am just going to pretend like that is the entire cross section of the tower and the thickness being the length of an average brick. Combining this crude ap-



proximation with my equally crude leftover knowledge of mechanics of materials gives the system of equations shown on the previous page. Filling in the values gives a maximum normal stress of 5.5 kPa and a maximum shear stress of 13.8 kPa. That is not a lot, especially considering that steel can withstand about 350 MPa until it deforms permanently. Using a smaller cross section, like 60 by 30 meters, would still have the structure standing. Even the larger King Kong would not be able to apply enough force to bring it down. However, the façade would suffer a lot of damage. A better approximation, using for example a set of columns instead of a large hollow one, would also see the stress rising rapidly. The scene can still be considered relatively realistic. Since the gap between the applied stress and yield stress is so large, it is unlikely this threshold would be crossed when the simplifications are less severe.

That is cool and all, but I planned my entire conclusion on the Empire State Building snapping like a twig. So what am I to conclude now? King Kong's knees doing so? I can, but that would make the whole article un-knee-ded. Good god...

1. [https://en.wikipedia.org/wiki/Orders_of_magnitude_\(energy\)](https://en.wikipedia.org/wiki/Orders_of_magnitude_(energy))
2. https://en.wikipedia.org/wiki/Square%20E2%80%9393cube_law
3. https://www.reddit.com/r/theydidthemath/comments/3czmq/request_could_the_empire_state_building_withstand/
4. I forgot to keep track of the others oops



$$\sigma_{max} = -\frac{hFL}{2I}$$

$$\tau_{max} = \frac{FQ_z(0)}{Iw}$$

$$Q_z(0) = \frac{1}{2}wht + \frac{1}{4}h^2t$$



Moving Astatine

Ward Huijskes

As you, the reader, will probably know, Astatine has moved. Where we once were located near the top of the Horst tower (in reality about half-way) looking down on the entire campus, we are now situated next to the pride and glory of the faculty and by extension the entire university. Of course I'm not referring to Alembic, but to the S&T home base.

To fully tell the story of the moving we need to go way back to April. The world was in full lock down and scrambling to battle the COVID-19 pandemic, but the 15th board had other things to worry about. Despite all of the setbacks of March, the construction of the new rooms continued as planned. A deadline was set. The preparation for the moving had begun.

After working through the tedious bureaucracy that is the Corona-times-UT, we finally got to enter the Astatine rooms in May. Unsurprisingly, we found the rooms back like we left them: a typhoid mess (read: tyfuszooi). Our first order of

business was tidying up the rooms, separating 15 years' worth of trash from the valuable items that make Astatine great and thus had to be brought over to Carré. Which leads us to the big discovery. Trash might be Astatine's most stable isotope. It takes about 15 years to lose about half of it.

In June, we finally got to the actual moving. Packing up all of our stuff in boxes, having it moved to Carré and unpacking it. Although this might sound the least spectacular, it was actually the bulk of the work. Besides the fairly mundane - incapable kandsis; accidental table theft; servers not working (shout-out to the itco) - everything went alright. Now the only thing that was left to do was figuring if we could actually use the rooms come September. ***spoiler alert*** (If you hadn't caught up with real life) the answer is yes.

Finally, I would like to finish with some encouraging words: A three-way tie for first still technically makes us the highest. Op de Hoogste!



ASTATINY

TaiChi Workshop

Did you ever know you could combine hitting people with making peace inside your head and being healthy? Well let me tell you about Tai Chi! Even though it literally means “Supreme Ultimate Boxing”, you don’t actually hit people anymore, but it is still considered a martial art that originated from China. It has now evolved into a form of meditation that focuses on synchronizing movements with breathing, which is what brings the health benefits in view. That is also how we stood there, at 1.5m distance, following the movements the teacher showed us, channeling our chi through controlled movements and having a lot of fun.



Holiday Picture Raffle

Due to the lockdown, we were not able to have the regular photo page filled with Astatine pictures. Since posting discord screenshots is not quite as pleasing to the eye, we asked members to share some photos of their holiday with us. You will find the results a little further in this edition. Thanks to everyone who submitted a picture, you really helped us out! Below is a picture of the only activity this year that could be captured without screenshots, just to keep the feel.



4 pages back, you may have stumbled upon some weird amazing scribbles. These were made by the new AT students during the “Get-to-know-your-association-game”, which the KITCAT organised during the kick-in. Can you guess them all? The answers are in the textbox on the right!

- Dreams
- Graduation
- Photo
- Bob Ross
- Chef
- Coconut
- Cactus
- Rome
- Roller Coaster

Lower row:

From left to right, upper row to right!



Trump or Astatine Quote?

- “You cannot tell me Barbados is a real country, it sounds more like a comic villain”
- “8 year olds are just hotter”
- “Yes, on average they are a little bit further on the spectrum”
- “You’re poor or you commit suicide, those are the only two options”
- “Internet is large”

(They are all Astatine quotes)



ASTATINY

Active Members Activity

Tom Veldman

Last year was weird. We all know it, we've heard it far too many times, so I won't go into it much further. Despite all this, Astatine still managed to organize a bunch of activities for her members.

Think of the online beer tasting, pubquizzes, movie nights and so on, but also the many drinks, the Nicat, the Bucom which almost happened, the ice skating, lunch lectures, module evaluations and so much more that took place before the pandemic.

With all this being organized by our many committees, the board felt that the effort you put in as active members for our association should not go in vain. Even though the lockdown prevented us from shaping the activity to its usual form, we came up with an alternative.

For those unaware, Astatine's Active Members Activity usually takes place in the form of a drink on the Jaknikkerveld behind the Horst. With free beer, speeches, lots of handshakes and useless talking, it's probably the best easy way that Astatine can say "thank you!" to all of our dear members. A personal invitation and a short talk from each board member is also included.

This year, the board wrote cards instead. A special handwritten card for each and every attendee ensured at least a bit of personalisation. These were then delivered to whoever signed up for them. Saving neither expense nor effort, the board biked from Hengelo to Lonneker to Glanerbrug and back to deliver a small token of our appreciation: An Astatine goody bag filled with snacks, drinks, the personal thank-you card and some items that would help out with the game that would be played that evening: Murder Mystery!

With several groups having formed and others connecting via whatever digital video calling platform they preferred, we had a wonderful night of solving puzzles and having fun. The murder mysteries were divided into several different themes: One took place in a 1929 mansion, another incorporated a bunch of famous characters and the last took place in a castle deep in the woods somewhere in Ireland. Oh, where a little imagination can take us!

All in all, the evening was quite successful for the participants, we heard a bunch of nice things about the activity. Even those who couldn't attend the activity were very happy with the present they got. We hope that you stay active for much longer, so that Astatine may stay healthy and be a fun and inspirational association.



Art at home

Alina von dem Bussche

Whether you want to boost your creativity, make a DIY gift or find a way to pass an afternoon at home when you need a break from studying - investing some time into an "artsy" project can be great fun. You don't need an art degree or the ability to create a photorealistic drawing to enjoy being creative or create some cool artworks. In case you are looking for some inspiration to get you started, maybe one of the two project prompts presented here will catch your fancy.

Art from Stains

Have you ever looked for funny, creature-shaped clouds? Or thought that the coffee stain on your lecture notes looks a lot like a face or an upside-down giraffe? The idea behind this prompt is not that different.

You can go looking for stains that have accumulated over time, but if those happen to be in short supply (maybe you have magical powers allowing you to avoid ink and drink spills on your notes), you can also intentionally create some.

You could drip some watered down watercolours or inks onto paper for colourful splashes or, in absence of paints, grab some coffee or strong tea for some muted, warm tones.

If you can find some thicker art paper it becomes even better, as the paper will be less prone to warping when undergoing water stain creation. However, don't let the absence of fancy paper stop you though, printer paper will also do, especially if you are just doing this to give yourself a creativity boost.

Once you have some stains, let your creativity unfold and look for the faces, creatures and objects they could contain. You can grab a marker or pen to add in some shapes and lines to define characters, mark eyes or add outlines. This way you not only end up with some interesting drawings, but you also train your brain to think creatively and identify interesting stories in the world around you that may otherwise be overlooked.



Soap carving

If you don't feel like drawing and prefer to craft something that you can hold in your hands, a fun project is soap carving.

All you really need is a bar of soap and a relatively sharp, non-serrated blade - a vegetable knife from the kitchen, a hobby knife or pocket knife will all do fine. You might also want to use an old newspaper, a dish towel or an unused curtain to cover whatever surface you are working on and facilitate the gathering of dropped scraps of soap.

Typically, when thinking of carving, wooden trinkets or perhaps stone statues come to mind and soap often does not feature on the list of materials people expect. However, carving in soap can be a nice alternative for an art project as it does not require expensive materials and tools, which is good news when living on a student budget. A bar of soap can be easily acquired from your local supermarket and you probably already have at least one knife at home. Soap is also a rather nice medium if you

want to work on your carving skills with less pressure to create awe-inspiring results. The inexpensive nature of supermarket soap bars means you don't need to feel bad if things don't go to plan and you want to start over (a step that might be more difficult if you have invested a small fortune into a fancy block of marble or raw diamonds as your carving medium).

In case of mishaps, soap can be a rather forgiving material to work with since you can, to a limited extent, undo some accidental breaks by grafting pieces of soap together with a little water. In case your bar of soap is rather dry and everything seems to crack apart when you try to carve it, it might help to wrap your soap in a slightly damp towel and leave it that way overnight to soften the soap.

Once you have completed your soap carving project you place any discarded soap scraps (and also the result if you don't want to keep it) next to your sink and use it to wash your hands.

*Anyone can make art
no fancy materials required.*

Collage

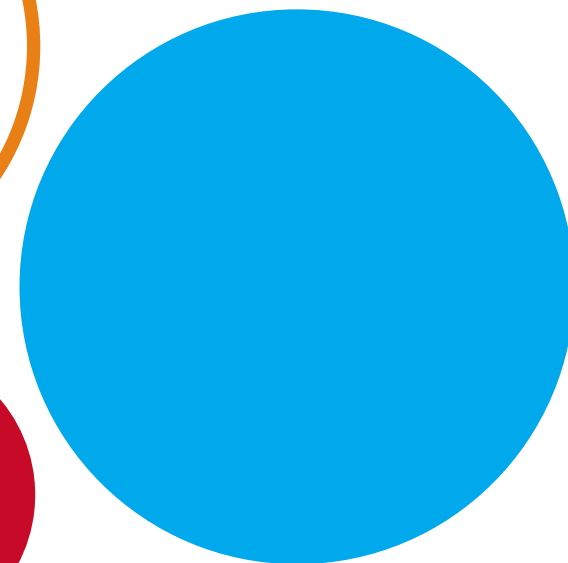
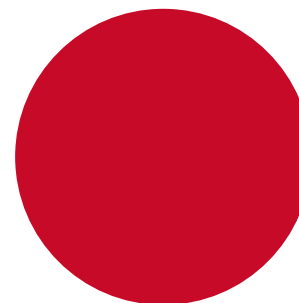
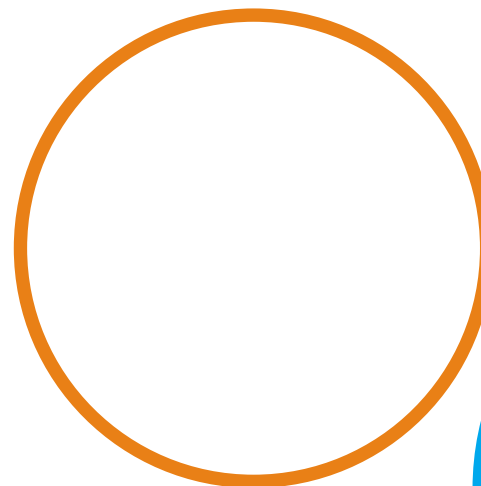
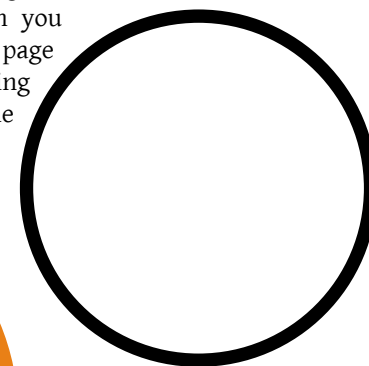
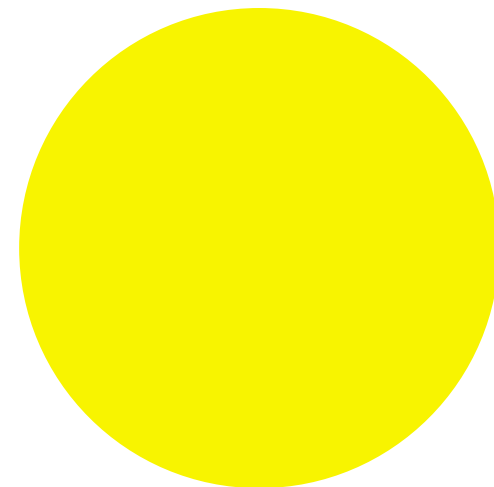
If you like the idea of combining different materials and mediums, then making collages might be a fun thing for you to do. You can compose a collage by sticking together different pieces of paper and combining them into one awesome art piece. If you want to, you can also draw or paint on top of the collections of interesting paper scraps that you have compiled. The great thing is that you do not need to buy any fancy “make your own scrapbook” art sets – you can just collect interesting looking pieces of papers from all around you. Anything that you no longer need as an intact piece of paper is pretty much fair game – old math notes, newspaper or magazine clippings, photographs, sticky notes, advertisements, receipts or tickets from events you attended some time in the past. You could, for example, collect pictures for the ingredients to your favourite meal from supermarket advertisements and combine them to make a creative recipe page.

Dot Art

One way to achieve interesting textures and effects in your artwork is using dots or small circles to ‘draw’. You can make your dots with pencils, markers, potato stamps... or even matlab if you feel so inclined. The possibilities are practically endless. You can make your dots all the same colour, give each area a specific colour or place dots of different colours together to let them blend together when viewed from a distance. By increasing and decreasing the size or density of dots you can vary the intensity of the colour you are using. Smaller dots tend to give you a bit more freedom to create detailed shapes and sharp edges by giving clouds of dots borders to areas of different dot density. Larger circles can make it possible to achieve a more bubbly effect and can create bold patterns.

Faces

Facial expressions are extremely useful when trying to communicate and are a great tool for expressing emotions. Sketching out photorealistic portraits can be rather time consuming, but luckily enough humans tend to be rather adept at recognising faces even when they are depicted with strongly simplified shapes. Even the simple combination of two dots and a line already lets us see a face :). By changing the shape and angle of the symbols used to show facial features, it is possible to make a handful of simple marks on paper display a wide range of emotions. Here’s a challenge: can you give each one of the circles on this page a different expression without looking at the emoji keyboard on your phone for ideas?





Sporty Snacks

Annelies Klaassen

Want to stay in shape? Working out regularly is very important and the first step. Having said that, I know next to nothing about sport. So instead, I will be talking about *food*. I love food.

Eating and drinking appropriately during your workout can make it much more effective. In this article I will talk about when, how much and what to eat and drink during a workout. On top of that, I will elaborate on how different types of sport require different types of meals, as well as the importance of choosing the right drinks. Hopefully, this will make your workout easier and more effective.

The food pyramid

Let's start with some basic food theory: the food pyramid, in Dutch the "Schijf van Vijf". The food pyramid is a guide to eating healthy and preparing meals with all essentials nutrients the human body needs. You know, drink milk and eat your greens. The classic food pyramid contains five food types, however sometimes additional groups are included.

Grains

Grains, like wheat, corn or rice, are the main source of complex carbohydrates. In the stomach, carbohydrates are converted into glycogen, which is one of the body's most direct sources of energy, making grains incredibly important. On top of carbohydrates, grains also provide the body with healthy fibres. Fibres cannot be processed by the body, but improve the chewing process and slow

down the flow of food through the intestines, giving the body more time to absorb the nutrients.

Vegetables and fruit

Vegetables, although they are not the most popular food, provide minerals like iron and calcium, as well as vitamin A and vitamin C. These important nutrients make vegetables essential, with a target amount of 200 grams a day.

Fruits are another major part of any healthy diet. Fruits contain fibres, vitamin C and natural sugar; fructose. As a carbohydrate, fructose provides energy for the body, but eating too much will have adverse effects. It is for the same reason you should not eat too much sugar: fructose is also called fruit sugar. On the other hand, fruits are one of the best sources of vitamin C. So unless you want to play pirate and lose your teeth, don't forget to eat some fruit every now and then.

Dairy

Moo juice! Next up are dairy products, like milk, butter and cheese. Dairy is the body's main source of calcium. Additionally, it contains protein, vitamin A and vitamin D. This makes dairy an important category of food, yet it has a downside. On top of all the good stuff, dairy also contains saturated fats, which can be harmful to the body. Because of this, consuming dairy should be done in moderation.

Meat, nuts and beans

The second to last group, often simply called the meat group, includes meat from mammals, poultry and fish. In addition meat alternatives are included, like nuts, beans and tofu. This group provides a lot of the required proteins, as well as minerals and the essential vitamin B12.

Oils

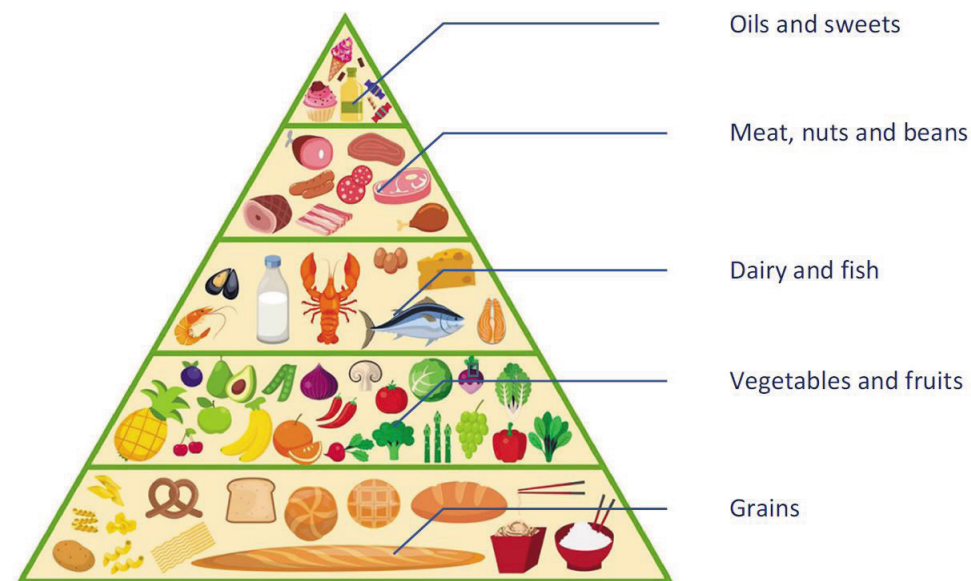
Oils are unsaturated fatty acids and provide the body with fats. Despite their bad reputation, some fats are actually very important. Fats contain the highest concentration of energy of any source and provide the body with energy during periods of low or moderate exertion. On top of that, there are some essential fatty acids, omega-3 and omega-6. They can be found in fish and vegetable oils.

Bonus round: Drinks

Though often not included in the food pyramid, drinks are extremely important. This is for the obvious component, water. During digestion, water is the medium in which all nutrients dissolve, from which the body is able to absorb and process it. Not drinking enough will disrupt this process and lead to problems in your digestive system. So, stay hydrated!

What to eat before, during and after your workout?

What you eat and drink before, during and after a workout is very important: it can make or break your training. Eating too much or the wrong kind of food in advance can make a workout more difficult or even painful, not drinking in between can be very dangerous and a wrong meal afterwards can have dire consequences



on the healing process. The specifics of professional sports diet are much more elaborate than what I will be discussing (or I'd never finish this article) but there are some basic tips that can help even you improve your workout.

A healthy snack

The first may sound obvious, but do not eat a large meal before working out. Starting a workout within two hours after your last meal is going to give you some bad stomach ache. Having said that, sporting on an empty stomach is also not a very smart idea: try to eat a carbohydrate-rich snack before starting.

The next issue should not arise during a short workout, but when exercising for more than one hour consecutively, remember to refill your glycogen stores by eating something with carbohydrates. This can be something as simple as a sandwich.

When you are finished, it is important to again replenish your carbohydrates as fast as possible. Try to consume a meal within the first two hours after finishing the workout.

A special diet

In addition to these basic tips, there are some extra guidelines depending on the type of sport you are doing.

Endurance sports require low to mild exertion for longer periods of time, making glycogen the most important source of energy. So if you plan on doing an endurance type workout, be sure to eat plenty of carbohydrates beforehand.

On the flipside, strength sports rely on short periods of high exertion. During training, growing your muscles will be your primary goal, which can be aided by eating lots of protein. Namely, proteins are used in the constructing of muscles and are essential in their recovery after exertion.

Drinks on the house

When you are exercising, and you may have guessed this, drinking is possibly more important than eating. So what's your favourite drink? Beer? I am afraid that is not a good option. Try a sports drink.

Sport drinks can be divided into three categories: hypotonic, isotonic and hypertonic drinks.

- Hypotonic drinks have a **lower...**
- Isotonic drinks have the **same...**
- Hypertonic drinks have a **higher...**

...carbohydrate concentration than/
as blood

For example water is a hypotonic drink as it contains almost no carbohydrates. The concentration of carbohydrates compared to the blood dictates the rate at which the body can absorb those carbohydrates. Therefore, it is important to choose the right drink for the right occasion.

Before starting your workout, it is smart to drink a glass of a hypotonic sports drink, like water. Then, during the exercise, drink a glass of hypotonic or isotonic drink every hour. It is important to down the glasses in one go. This will make the

drink pass through the stomach faster and prevent it from sloshing around. You do not want that.

After the workout is finished, a hypertonic drink is recommended to bring your reserves up to standard and replenish your carbohydrates. Drink your beers later on, at least two hours after your workout.

"And if I follow these 10 tricks, will I lose 5 kg in one week?". Euh no, please don't sue me...

This is not that kind of article. But I do hope it will help you choose healthier snacks when exercising and make your workouts more enjoyable and effective.

Sources

1. Wikipedia
2. My BSM (Be Sports Minded) course in high school
3. Food pyramid picture: usupdates.com
4. Image by 272447 from Pixabay



ASML

When opportunity knocks, dare to open the door

Experienced people know that careers are founded as much on luck as judgement and skill, so Arnela Masic discovered during her engineering studies in 2015. One lucky moment put her on a path to the career she enjoys today: she forgot her lunch. “A friend suggested I could get a free lunch at an ASML-hosted lunch meeting on campus that day. It was there I learned about the ASML scholarship. I applied and was eventually selected – it felt pretty special as only 25 scholarships are on offer in The Netherlands each year.” Through the scholarship, ASML supported Arnela through a Masters in Systems and Control, which then led to her joining the company in 2017.

Nothing “grey-haired” about it

“Everybody at my university had heard of ASML – the logo is everywhere. But what they did there was more of a mystery. For me personally, ‘lithography’ did not sound as interesting as other technical industries like aerospace or automotive. I was picturing grey-haired guys doing boring experiments. It wasn’t until I got to know them through the scholarship that I realized there’s nothing ‘grey-haired’ about it. There are so many different careers here, with such diverse, super-smart people. It was nothing like I expected.”

Engineering and so much more

“I was looking for more than just a ‘technical’ job. After learning about the many different careers on offer, the role of Customer Support Applications Engineer really appealed to me. I get to travel to customer sites around the world – the US, Korea, Japan, China and Taiwan – and work on projects to improve the performance of our lithography systems. I get to use my engineering knowledge – not in terms of always knowing the answers, but in terms of applying logic, troubleshooting, analysis and identifying which experts can help – and I combine it with communications, project management and implementation. There’s great team spirit; I’m supported by a wide network of experienced colleagues who all help each other.”

An idea worth millions

“And I receive lots of training, both technical and non-technical – soft skills like customer focus and influencing without power.” Arnela quickly found out how useful her newly acquired skills are. “There was an project at a customer where it was important to prove a certain output of a machine in order to make the sale. However, at that moment, there was an issue with one of the machine parts that would not have helped my demo test. My training helped me convince people to make this issue a priority over their own projects, resulting not only in a permanent solution, but also in the sale of the system worth millions!”

ASML provides chipmakers with hardware, software and services to mass-produce patterns on silicon, helping to build the electronic devices that keep us informed, entertained and connected.

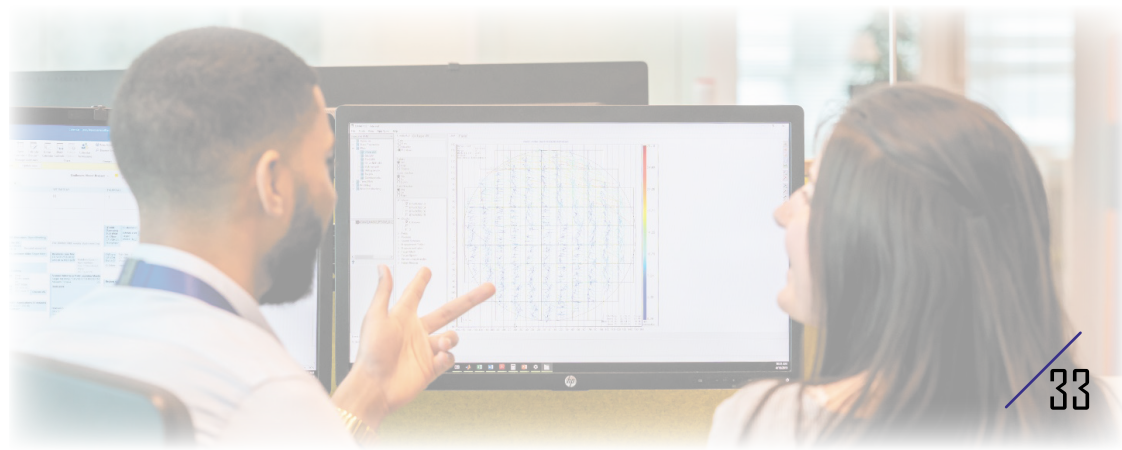
We’re a dynamic team of 25,000 people from 118 different nationalities and counting. Headquartered in Europe’s tech hub, the Brainport Eindhoven region in The Netherlands, we have over 60 locations in 16 countries and annual net sales of €11.8 billion in 2019.

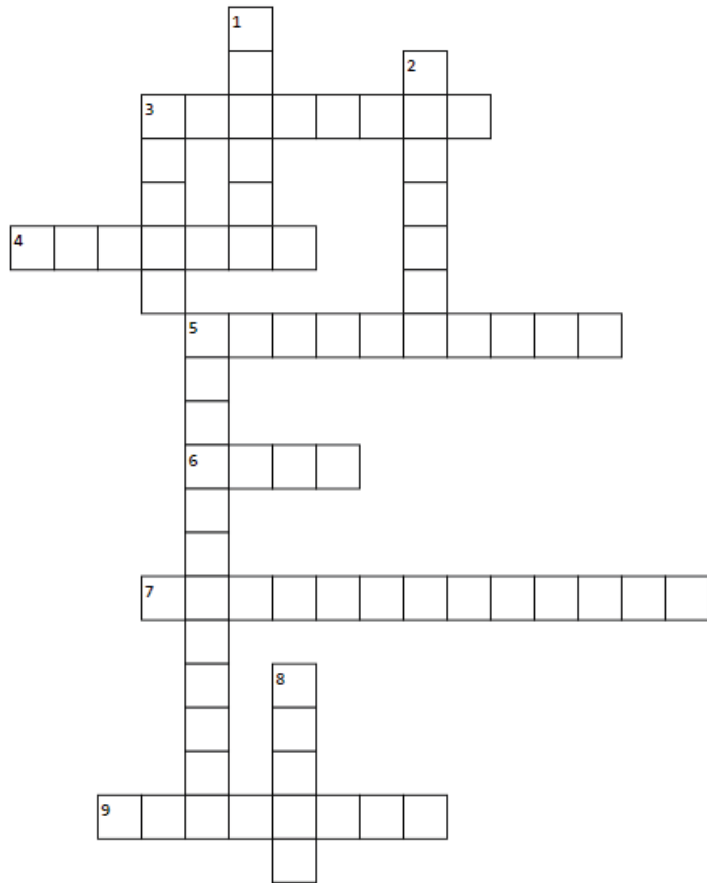
Be part of progress. Visit www.asml.com/careers.

Arnela’s advice – ‘go for it’

“My advice is, if something about a job sounds interesting, then don’t overthink it, just try it, because you never know exactly what you will be doing on a day to day basis. That’s okay, nobody does when For me, there has literally been a whole world to discover, and I’m really enjoying the journey – it was worth stepping into the unknown to start it.”

Are you interested to learn more about ASML? Visit www.asml.com/students for more information about our events, internships and scholarship program.





- Across**
- Cooking surface for the Cheerful Chef recipe
 - Study advisor of the first years
 - Drinks with a higher amount of carbohydrate concentration than blood
 - Inexpensive material used for carving
 - game played by members during the active member activity
 - A giant lizard equipped with laser beams
 - Role in the Board of Stephan
- Down**
- Study advisor of the second and third years
 - home-town of Jenny
 - Building Astatine has moved to
 - result of the sum of Timons relaxing activities and passions.
 - Role in the Board of Jan den Uijl

Cheerful Chef

Alina von dem Bussche

Sitting around a fire with some friends – keeping distance from the flames and each other – can be a nice way to spend summer and autumn evenings. When selecting your array of snacks for such an occasion, campfire bread is a fun candidate.

How to do it

1. Take a large mixing bowl and put the water in it. Break the yeast in small pieces into the bowl and stir well to dissolve it. Once you have no clumps of yeast left, add the other ingredients. If you feel like making your bread more fancy, you can also add herbs and spices to your preference. Mix all ingredients well and knead thoroughly to achieve a smooth, homogenous dough. If necessary you can add a bit of extra flour to combat excessive stickiness.

2. Cover the bowl, holding your glob of dough with a kitchen towel or some cling film and let it rest somewhere at warm room temperature for at least 30 minutes (in this time it should double in size).



3. In order to suspend your bread over the campfire, you will need to take some small branches (1 per person) and use a knife to remove the bark from a section about as long as your hand at one end of each branch. Once your campfire is nice and hot, pull a chunk of dough into a string that's about as thick as your thumb and wrap it around the de-barked part of your stick. Hold the bread covered part of the stick over the fire and wait for it to get nicely browned, slowly turning to bake it evenly. Closer to the flames this will happen faster, but getting too close will result in an ash covered exterior and an unbaked interior, which you probably want to avoid. Once the bread is easy to pull off the stick it's ready to eat.

*In case a campfire is unavailable you can also shape the dough into a loaf, cover all sides in a drizzle of oil, optionally sprinkle some salt on the top, and bake it on a baking tray in your oven at ~180°C until it turns golden brown at the edges.

Campfire Bread

Ingredients:

- 20 g fresh yeast (or 1 packet of dry yeast)
- 150 ml lukewarm water
- 250 g flour
- 0.5 teaspoon salt
- 1 teaspoon honey
- 2 tablespoons olive oil



Why we need nuclear power to decarbonize sustainably

The scientific case for climate change is overwhelming, immediate and undeniable – the burning of fossil fuels has to stop. If climate change is the biggest immediate challenge we face, how can we quickly move to a global energy supply that meets our needs while remaining sustainable?

Every small action makes a difference, of course: recycle those cans; walk instead of drive; cut down on plastic packaging. But will that be enough? Our hunger for energy continues to rise, and not just in the most obvious ways of transport, heat and light. After all, even an email has a carbon footprint, and something needs to power the internet.

“We have to do everything possible to overcome this challenge” says Reinhard Hinterreither, CEO of ETC Nederland, “Only a mix of the different types of renewable energy sources, plus nuclear energy, can help remediate the problem and give us an achievable and sustainable energy supply. If we genuinely want to get to zero CO₂ emissions and completely

decarbonize by 2050, there isn’t any other way.”

Delivering future demands while decarbonizing is not going to be easy. “Can anyone predict when the human race’s demand for power will actually fall?” asks Hinterreither. “Our industrial processes need huge amounts of energy. If we want to continue to produce the steel and concrete that underpin our engineering projects without burning fossil fuels, we need nuclear power. Looking at the technologies that we have available today, if we are serious about achieving net carbon zero by 2050, there is no other option but to embrace nuclear power as part of an energy mix that drives and sustains a cleaner world.”