Aalto University
School of Chemical
Engineering

Welcome to study at Aalto University!

Master's Programme in Chemical, Biochemical and Materials Engineering

Functional Materials

8.9.2021 Mady Elbahri and Minna Marin

Agenda

1. Who are we? Getting to know each other
2. Personnel of the major
3. Degree and major structure
4. Special arrangements in Autumn 2021
5. Student guidance and coaching
6. Practical study matters
7. Meeting the academic advisors

Who are we?

A short presentation of everyone present

Please tell briefly something about yourself to others, for example:

- Your name
- The country you are from
- Are you studying on campus or remotely?
- What do you expect from the forthcoming academic year 2021-2022?

Functional Materials 2021-2022

Teachers:

Prof. Mady Elbahri (**Sustainable** Nanomaterials & Technology)
Prof. Sami Franssila (Micro- and nanofabrication, microfluidics)
Prof. Jari Koskinen (Thin films, biosensors)
Prof. Jaana Vapaavuori (Functional polymers, optical properties)
Prof. Roman Nowak (**Nanomechanics, Nordic Hysitron Laboratory**)
Prof. Michael Gasik (Materials processing and powder metallurgy)
Dr. Kirsi Yliniemi (electrochemistry, nanoscience)
Dr. Ville Jokinen (microfluidics, nanobioscience, surfaces)
Dr. Yanglin Ge (microscopy and diffraction)
Dr. Girish Tewari (electrical, magnetic and thermal properties)
Prof. Antti Karttunen (inorganic materials, computational science)
Prof. Maarit Karppinen (ALD, thermoelectrics, inorganic chemistry)

Learning services

Photo: Unto Rautio

Student advisor: Melissa Hendrén
msc-advisors-chem@aalto.fi

Study secretary: Kati Sumu
studies-chem@aalto.fi

Planning officer: Minna Marin
Minna.marin@aalto.fi

Additional information:
https://into.aalto.fi/display/encbme/Contact

Degree structure and planning your studies

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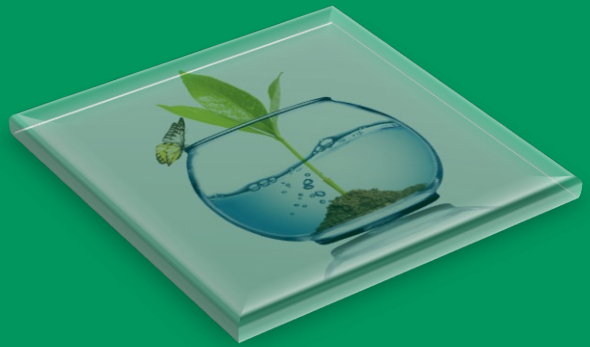
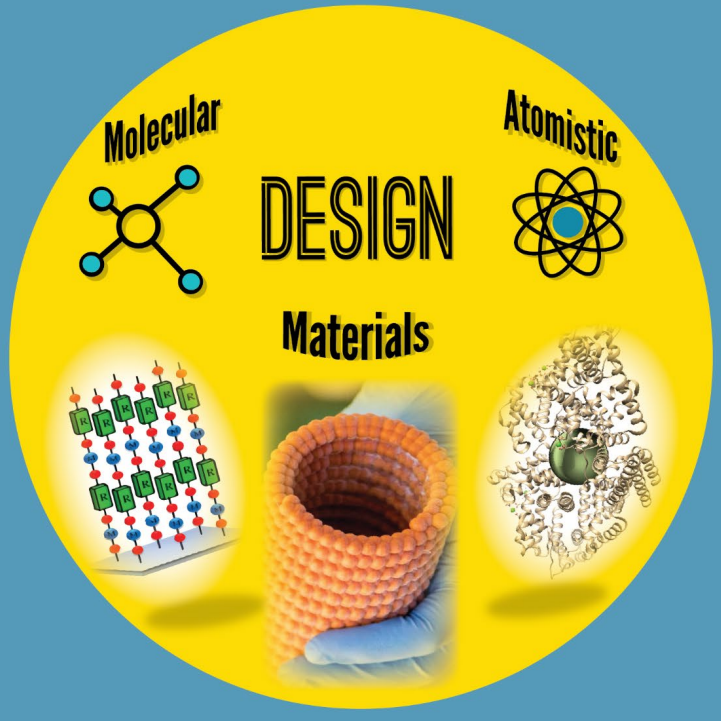
Functional Materials Program



A Multidisciplinary Program with a Sustainable Vision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Materials


SUSTAINABLE SYSTEMS
Molecular
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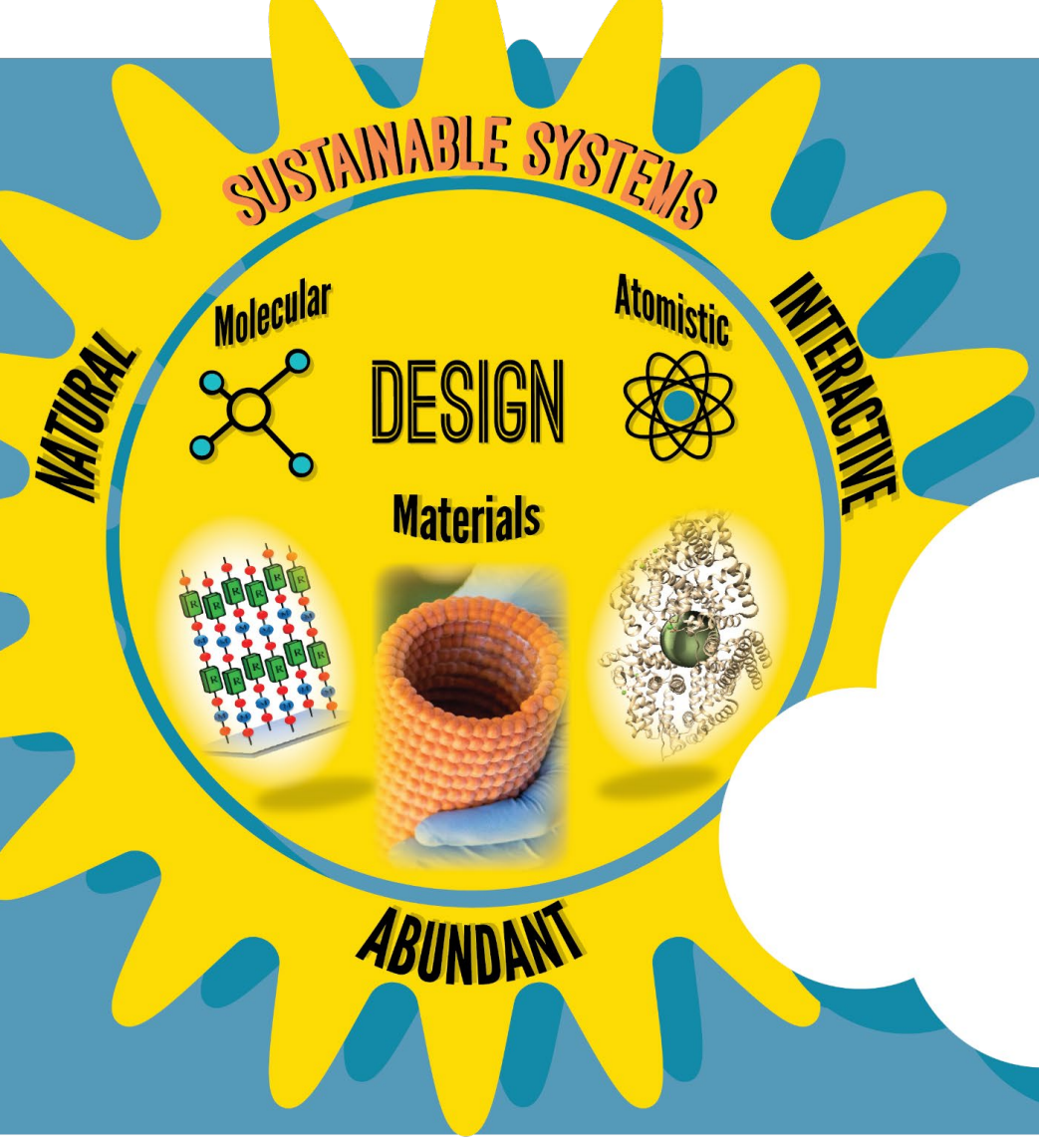
INTERACTIVE
ABUNDANT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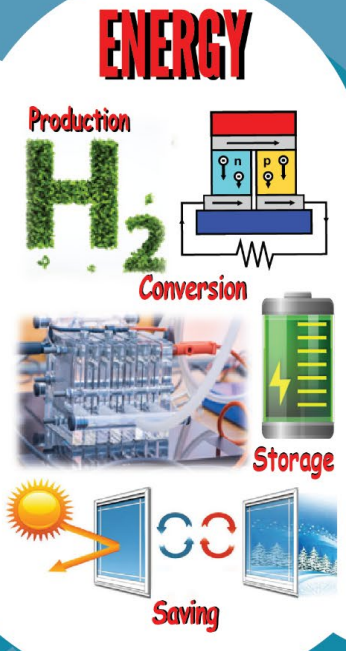
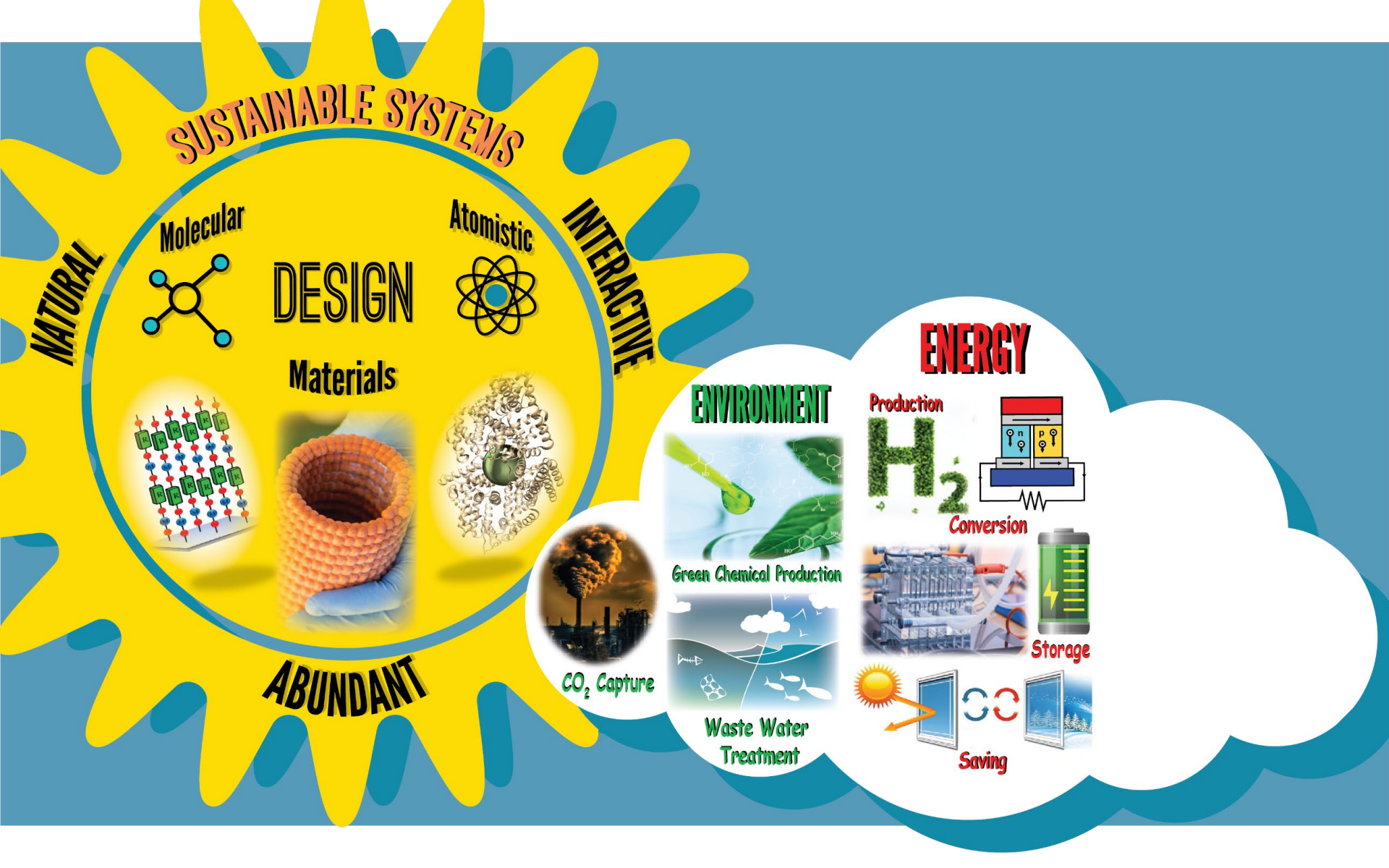

ENERGY
Production
H_2
Conversion
Storage
Saving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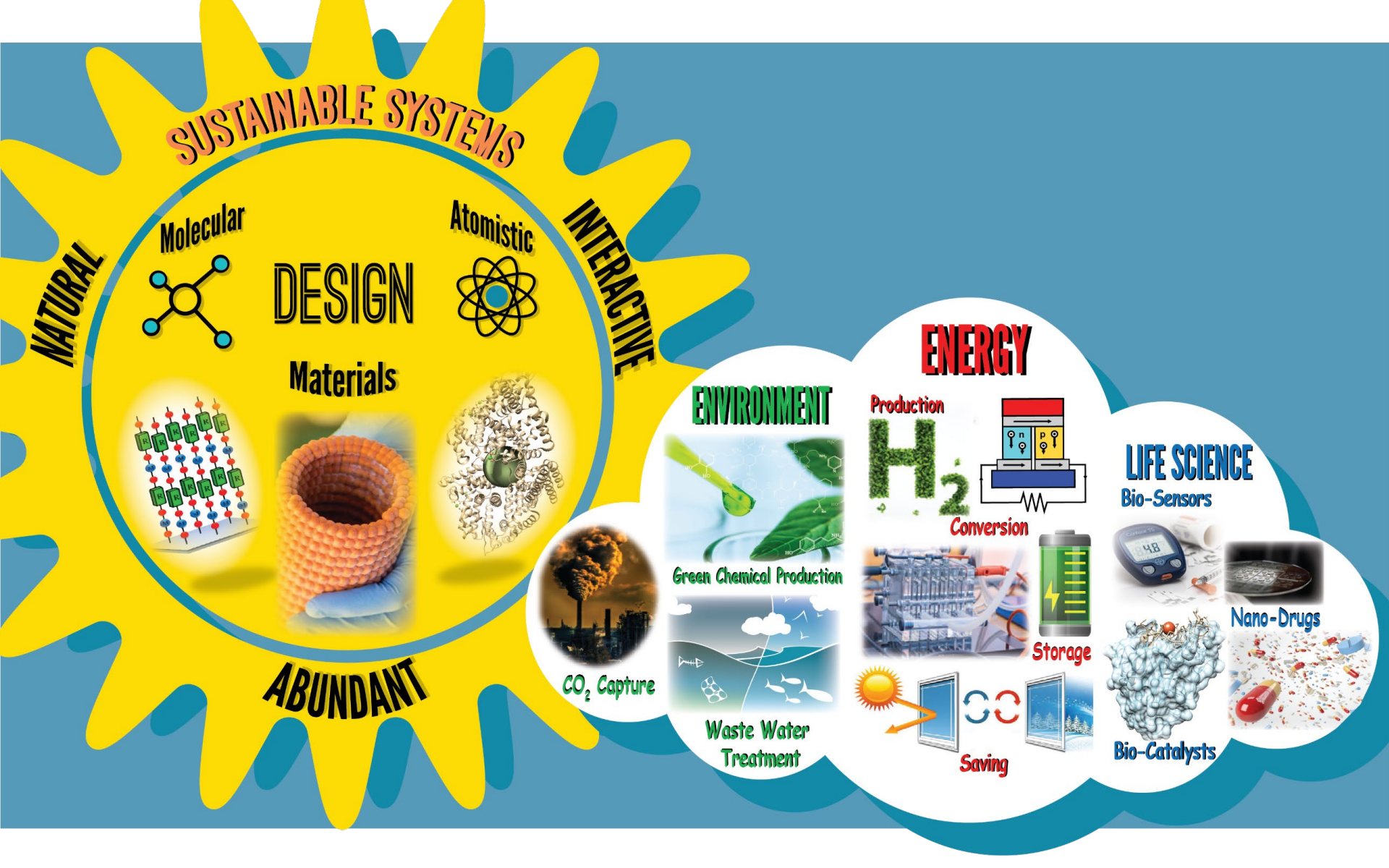
Conversion
Green Chemical Production
Storage
CO_2 Capture
Waste Water Treatment
Saving


SUSTAINABLE SYSTEMS
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ENERGY
ENVIRONMENT
LIFE SCIENCE
Production
H_2
Conversion
Green Chemical Production
Bio-Sensors
CO_2 Capture
Storage
Nano-Drugs
Waste Water Treatment
Saving
Bio-Catalysts

SUSTAINABLE SYSTEMS

NATURAL

INTERACTIVE

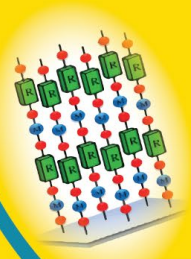
ABUNDANT

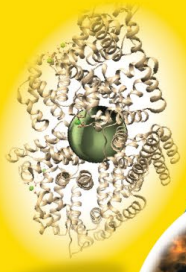
Molecular

Atomistic

DESIGN

Materials





SUSTAINABLE DEVELOPMENT GOALS

Responsible Production

Climate Action

Clean Water

Clean Energy

Good Health

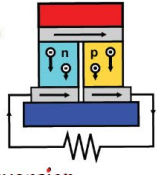
Innovation

ENERGY

ENVIRONMENT

Production

H_2



Conversion

Green Chemical Production

CO_2 Capture

Storage

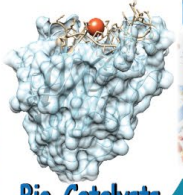
Waste Water Treatment

Saving

LIFE SCIENCE

Bio-Sensors

Nano-Drugs



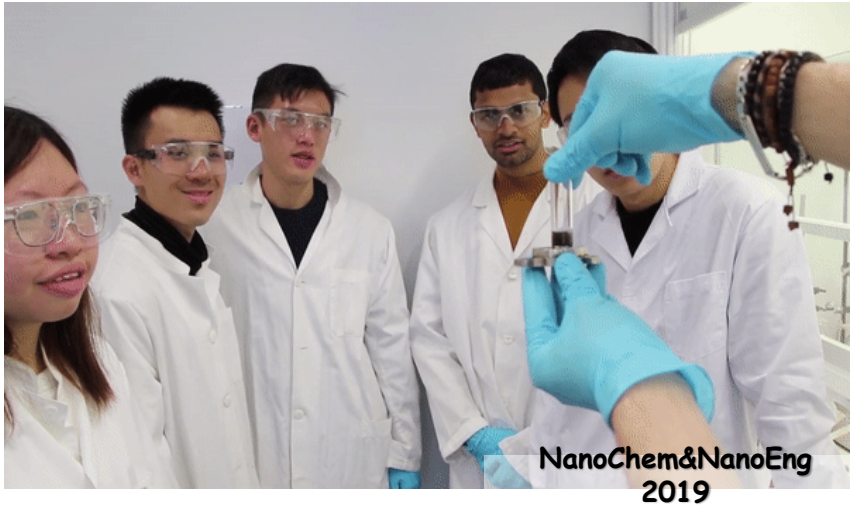
Bio-Catalysts

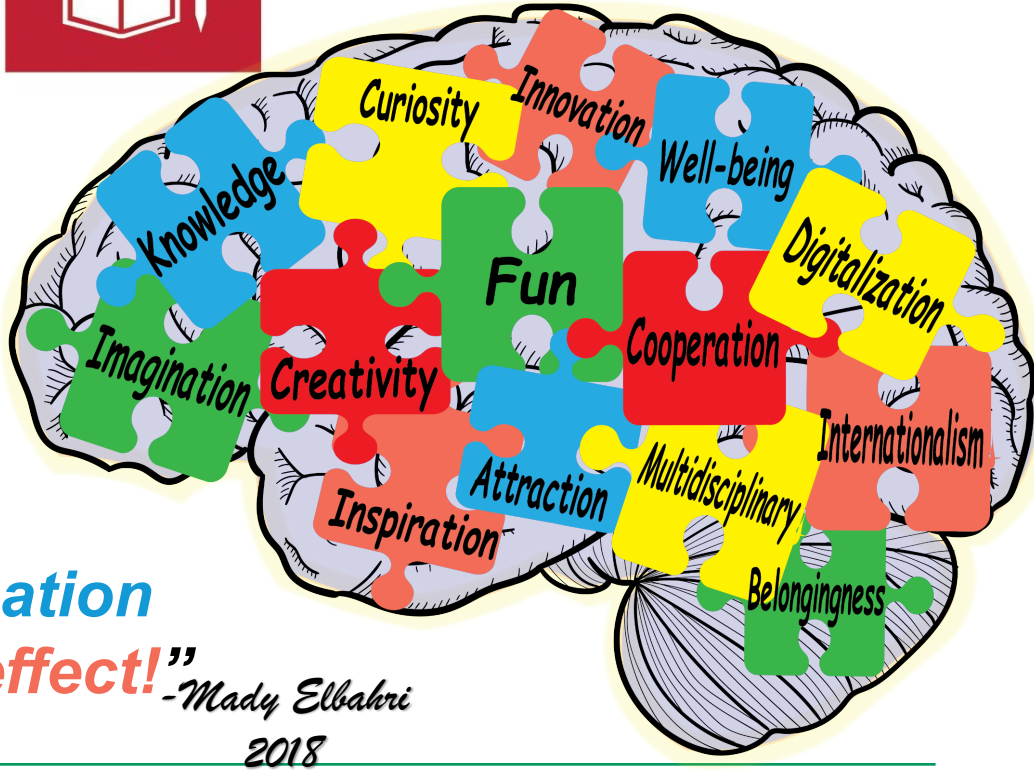
Education's Vision:

SUSTAINABLE DEVELOPMENT GOALS

QUALITY EDUCATION

Creative Environment





"When Science meets Education it reveals an Aha effect!"

-Mady Elbahri 2018

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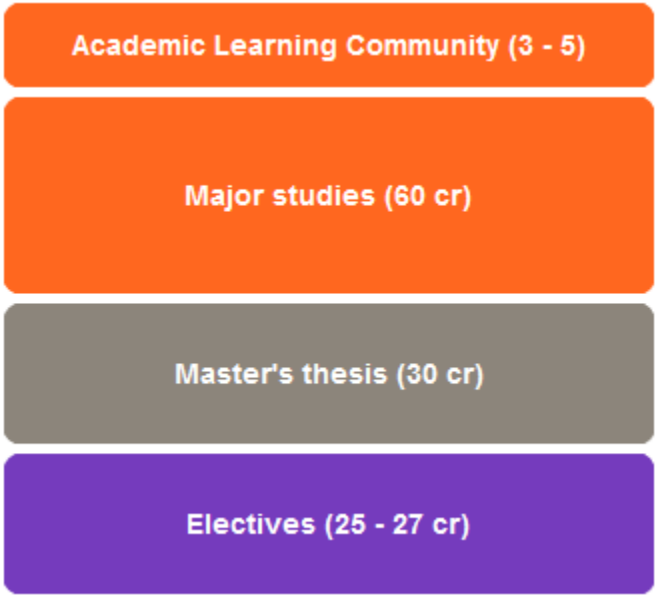
Degree structure



120 ECTS credits:

- **Academic Learning Community (3-5 cr)**
  - *common to all students in Master's Programme in Chemical, Biochemical and Materials Engineering regardless of the major*
- **60 cr major studies**
  - *Compulsory studies*
  - *Specialization studies*
- **30 cr master's thesis** (approx. 5 months active work)
- **25 - 27 cr elective studies**
  - *Can include a minor*

→ Master of Science (Tech.)

CHEM-E0105 Academic Learning Community

Let's make this the best course ever!

Please note: MATLAB module (1 ECTS) starts on Monday, Sep 13th, 8-10 am

What?

- Course for *all* master's students in CHEM
- 3-5 cr, depending on completed tasks

When?

- Periods I-V
- Starting on September 20th, 8:30-10 am

Why?

- Learning *general skills and knowledge*
- Helping you *succeed in your studies*

For more information: MyCourses

Senior university lecturer *Kyösti Ruuttunen* cannot wait for the course to start!

Photo: Kitty Norros

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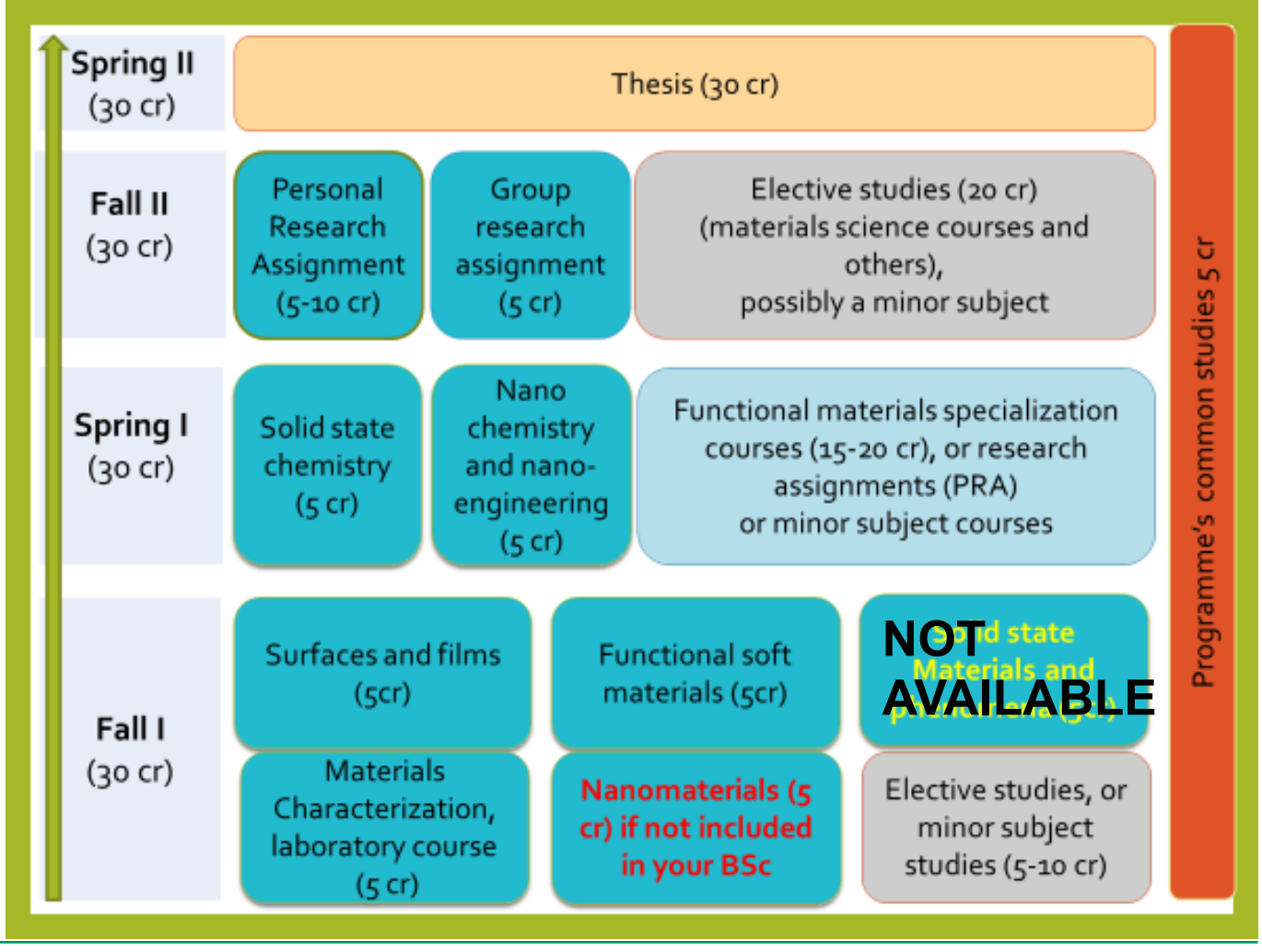
Major

Bottom-Up



Major – specialisation studies

At least 15 cr of specialization courses

Three track recommendations:

- MEMS and microsensors
- Solid state and nanoscience
- Polymers, soft matter and biomaterials

Up to 35 cr specialization courses if you fill electives with Funmat courses (=7 courses).

Elective studies / Minor

- Elective studies (25-27 cr)

- Possible to include a minor (15-25 cr) into the elective studies
- Minor not compulsory

→ degree without minor

- https://into.aalto.fi/display/enopinnot/Minors+2020-2022

Special arrangements in Autumn 2021

Code	Name	Credits	Period	Arrangements
CHEM-E0105	Academic Learning Community	3-5	I–V / 1st	Teaching remotely
CHEM-E5150	Surfaces and Films	5	I–II/ 1st	Some sessions on campus
CHEM-E5160	Functional Soft Materials D	5	I/ 1st	Teaching remotely
CHEM-C3410	Nanomaterials*	5	I-II/1st	Teaching remotely, some sessions on campus (available also remotely)
CHEM-E5140	Materials Characterization, laboratory course	5	I–II / 1st	**Laboratory work on campus**

Personal Research Assignment + SISU

- If you take **CHEM-E5200 PRA V** more than once, use the additional codes **CHEM-E520001** and/or **CHEM-E520002** on your second/third round
- **When you plan to take the course:**
  - Register via SISU
  - Contact the teacher
  - Use the correct code in your report → teacher will know, which one is in question
- **Only one MyCourses page is used, CHEM-E5200**

Students starting in 2021:

- SISU has all the three different options available in the structure

Students, who have started already in 2020 or earlier:

- You may search for the additional course codes & add them to your plan via “Free Edit mode” (“Vapaan muokkauksen tila”) and ask for approval

Laboratory Safety Course

- **To be included in your personal study plan, if you have not done "*CHEM-A1010 Turvallinen työskentely laboratoriossa*" in your Aalto BSc - > take CHEM-E0140 Laboratory Safety Course**

CHEM-E0140 Laboratory Safety Course

- Can be added to your elective studies, scope 0 cr

Language studies

- Mandatory in your degree if not part of your bachelor's degree (according to degree regulations)

- **3 ECTS** credits
- Only courses with letters O (for oral) and W (for written) fulfil the requirements
- English recommended, but other languages can be taken as well
- Finnish basic courses allowed

- Students with a Finnish bachelor's degree (including AMK students): usually no obligatory language studies required

Master's Thesis

MyCourses page for unpaid thesis positions at CMAT department

Goal: master's thesis completed by the end of the 2nd study year

Before you start your master's thesis:

- complete all compulsory studies
- make sure your study plan is up-to-date

How to find a thesis position/topic:

- Be active!
- Start looking for a master's thesis position early, during the Spring of the 1st study year
- Be open to new ideas!
- Don't wait too long for the "perfect" master's thesis offer

Planning your studies

All students are required to prepare a personal study plan (HOPS) as a part of their master's studies and always keep it up-to-date.

- The study plan is a binding agreement on both parties: the student and the university.
- Students can, at any time of their studies, update their study plan. The study plan should at all times correspond to the student's current plan for his/her studies. Changes to the study plan should always be done before participating in courses.

Planning your studies

- The study plan includes:
  1. Major courses, based on curriculum
     - *Compulsory courses and specialisation courses*
  2. Elective courses
     - *Possible to include a minor in the elective studies, not compulsory*
  3. Timing of all chosen courses and the master's thesis

- Study plans are created in SISU
- Some parts require approval
  - *Approved by the planning officer, deviations from the curriculum need to be separately approved by the professor in charge of the major*
- Deadline: **10 September 2021**
- More instructions: https://into.aalto.fi/display/encbme/Planning+your+studies

Why should you earn your degree within two academic years?

Requires an average of 60 credits per year

WHY?

- It shows your potential future employers that you are able to commit to your studies and that you can acquire a wide spectrum of new knowledge while keeping to an agreed schedule
- CHEM rewards students who have completed their degree within the target time -> 500€

More information: https://into.aalto.fi/display/encbme/Planning+your+studies

Student guidance and coaching in Aalto CHEM

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Academic advising

The academic advising at Aalto CHEM is organised in connection with the course CHEM-E0105 Academic Learning Community.

- *Two compulsory individual meetings with your academic advisor (academic advisor organizes)*
- *Support!*

Academic advising groups

Mady Elbahri

- Jie Zhang
- Nikita Bobrov
- Thi Ha Trang Pham
- Amirhossein Azari
- Sami Pekka Nikolai Patteri
- Marko Kaarne
- Fanni Kannisto
- Janne Kaskirinne
- Erkka Koskenniemi
- Oona Mollberg

Kirsi Yliniemi

- Mari Pauliina Heikkinen
- Juha Mikael Linjala
- Azad B. Karis
- Wathsala Jayarathne
- Iiro Peuhkuri
- Pinja Räisänen
- Alexi Sirén
- Sini Suurnäkki
- Ella Kultalahti

Ville Jokinen

- Niko Henrik Kuismin
- Aki Oskari Saarnio
- Priyanka Goel
- Suman Thapa
- Hilma Kovanen
- Solja Lukka
- Lauri Manner
- Miko Niemistö
- Anna Pasonen

Practical study matters

Student feedback

Be active in providing your feedback regarding courses and also the major as a whole

Course feedback is collected after every course and is valuable for course development

Feedback sessions with students and teachers will be organized

Twice in an academic year.

These sessions are a part of CHEM-E0105 Academic Learning Community course.

Be an active student

- Take the responsibility of your studies
- Use the curriculum and other resources → Into, MyCourses, SISU
- Read your **aalto.fi e-mails**
  - *Change the password every 2 years*

- Can't find information or unsure -> please, ask!
- Participate actively in your courses and challenge your teacher!

What's next?

- Orientation to Services and Wellbeing, "Service fair": **Thu September 9, 13:00-15:00** LINK **(***for students from outside Aalto, optional for Aalto bachelors***)**
- IT services and enrolment to courses: Thu **9.9. at 10.00-12:00** *(for students from outside Aalto, recommended for Aalto bachelors)*
- Student union (AYY) introduction **Fri 10.9. 9:30-10:00**(*Optional for all) LINK*
- Q&A Session with Learning Services Fri 10:00-12:00 (*Optional for all) LINK*
- TeekkariLife lecture ~30 min (*Optional for all, you can watch at any time*)

Meeting the academic advisers

In small groups

- Getting to know each other
- Study plan
- Free discussion

In zoom breakout rooms

Choose the room with your own academic adviser