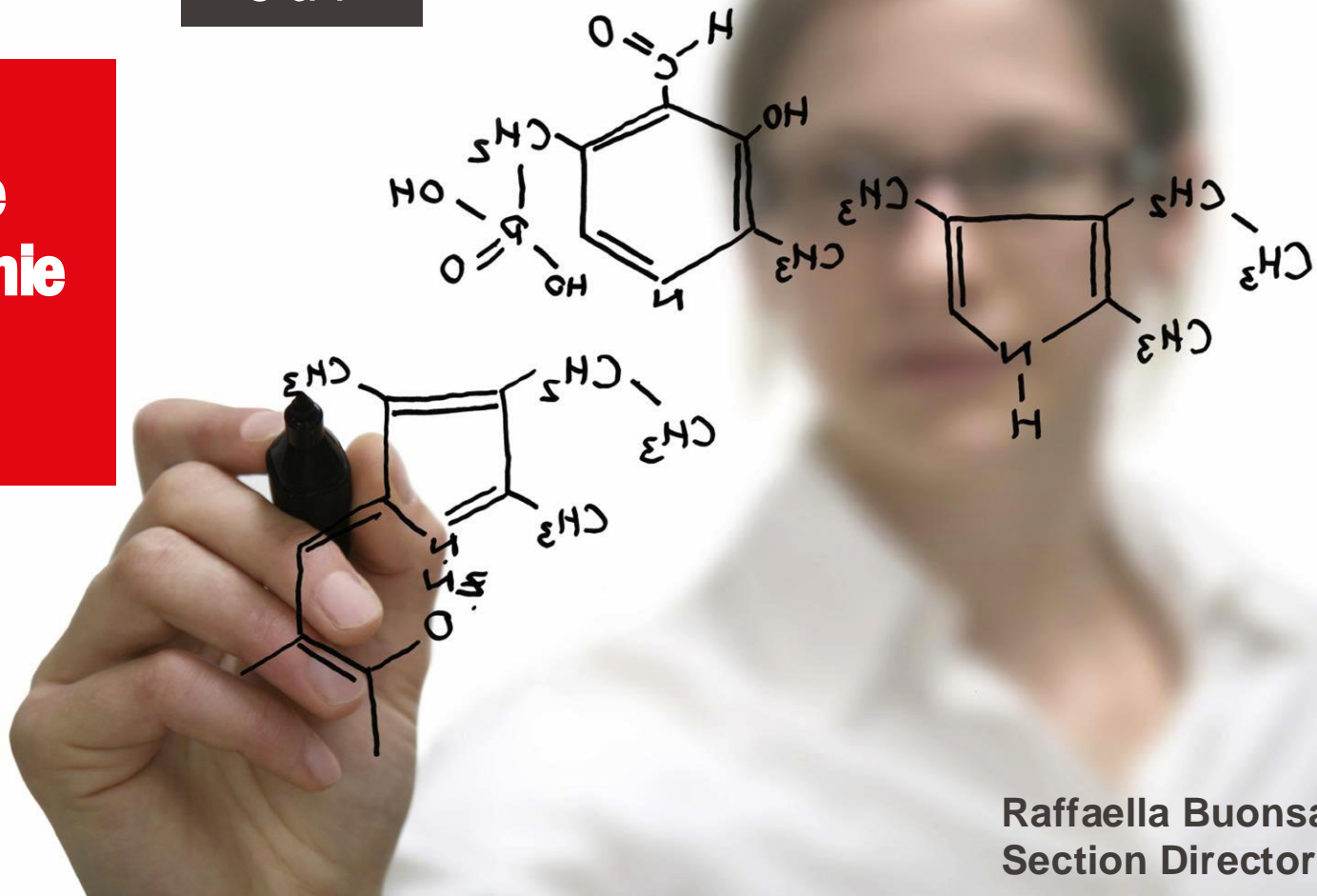


Section de chimie et génie chimique



Raffaella Buonsanti
Section Director

- Information

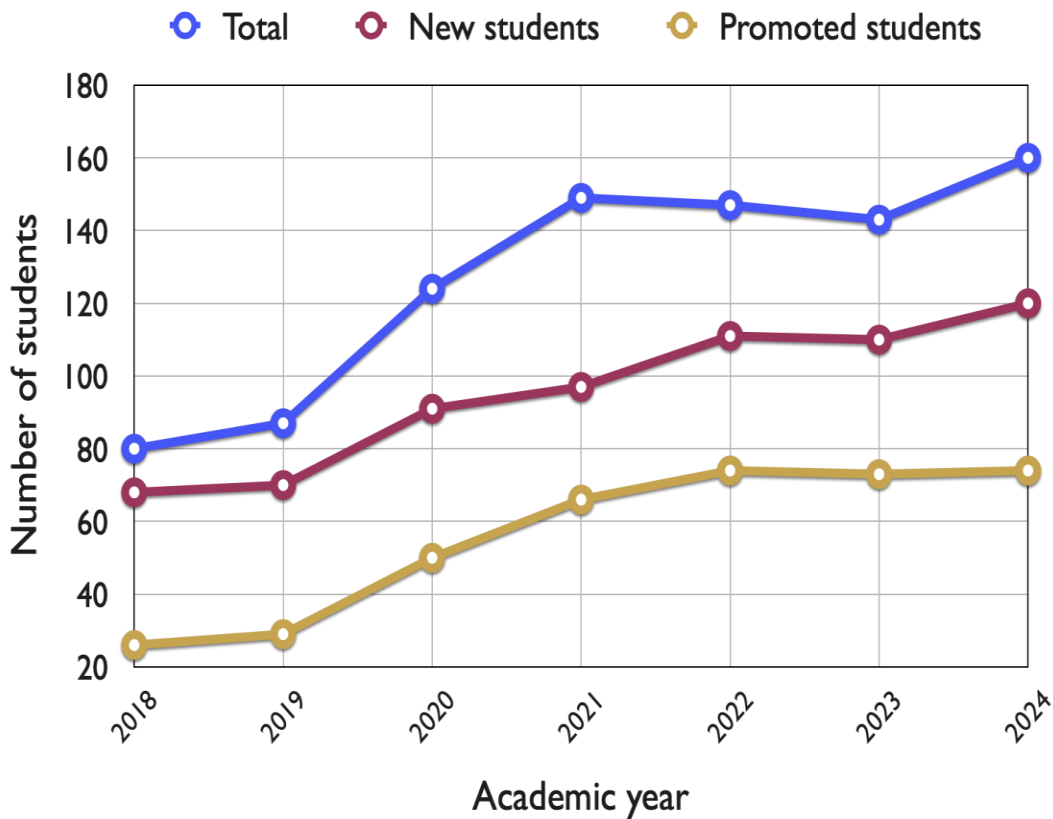
Le futur de la chimie :

- Chemistry beyond organic synthesis and pharma
- Présentation Dr. Pascal Miéville, Directeur opérationnel du Catalysis Hub-Swiss CAT +
- Présentation Dr. Ljubisa Miskovic, Laboratoire de biotechnologie computationnelle des systèmes

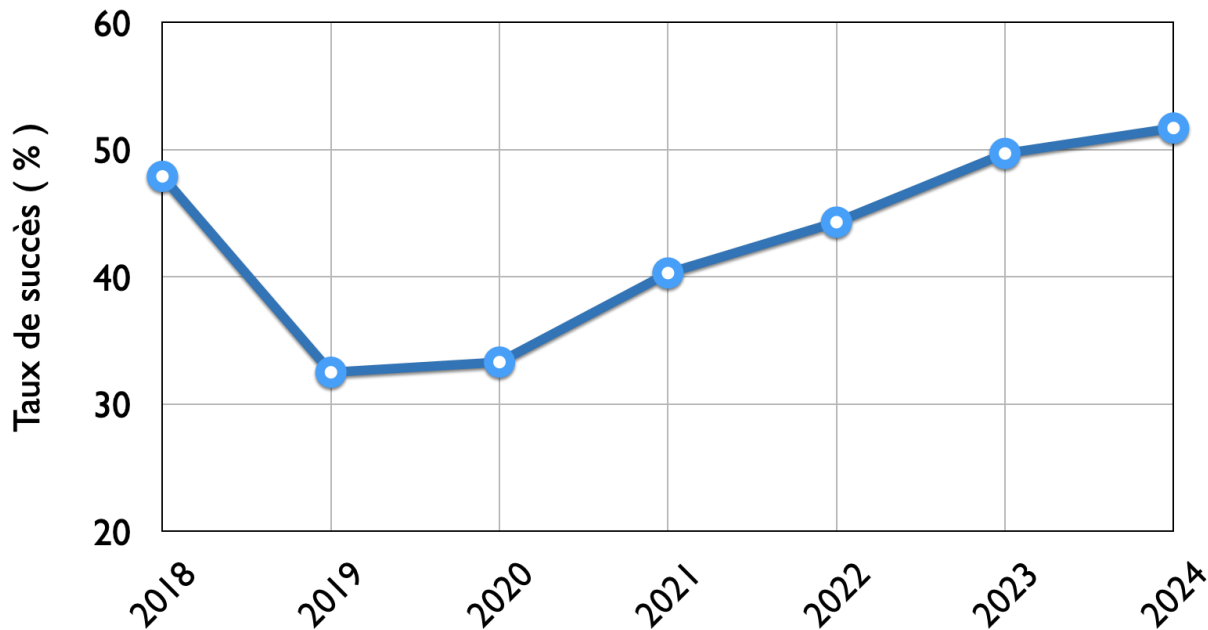
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Taux de succès en première année



Taux succès 1^e année

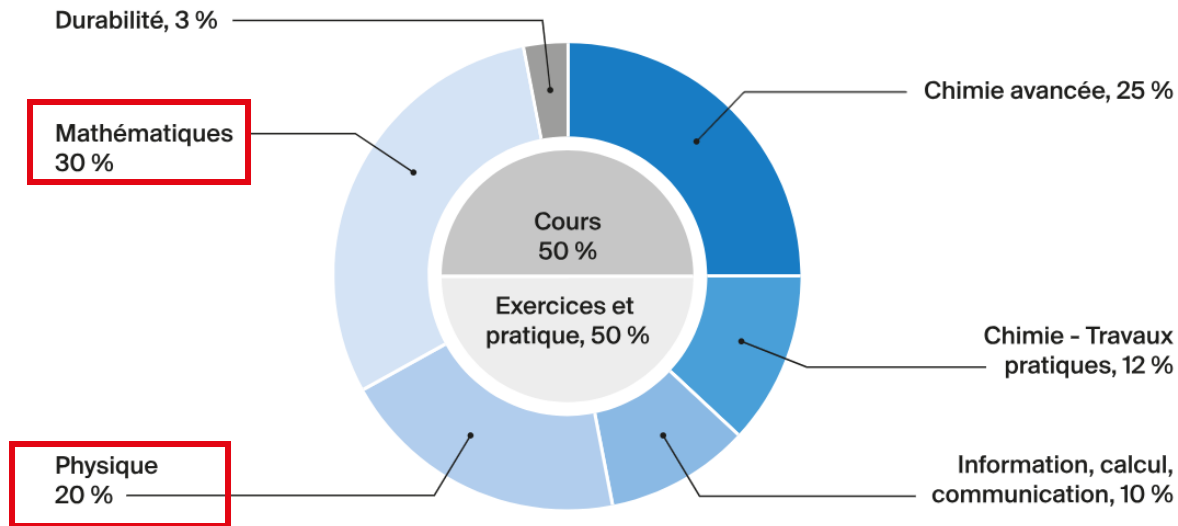
Exemple 2023-2024

étudiants début d'année : 110

étudiants promus: 46 **42%**

Taux succès ensuite au bachelor : 95 – 100%

Bachelor – Cycle propédeutique



+ autodiscipline depuis le jour 0


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Illustrations: Niklas Elmehed

THE NOBEL PRIZE
IN CHEMISTRY 2023




Moungi G. Bawendi Louis E. Brus Alexei I. Ekimov

"for the discovery and synthesis of quantum dots"

THE ROYAL SWEDISH ACADEMY OF SCIENCES

Illustrations: Niklas Elmehed

THE NOBEL PRIZE
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David Baker Demis Hassabis John M. Jumper

"for computational protein design" "for protein structure prediction"

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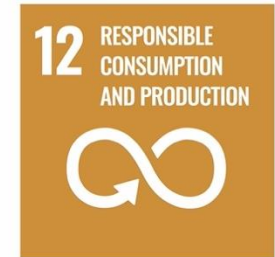
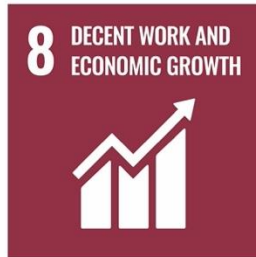


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SUSTAINABLE DEVELOPMENT GOALS

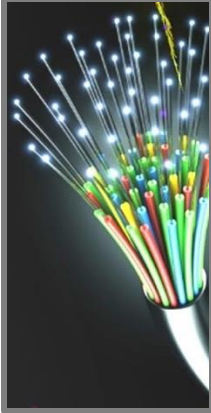
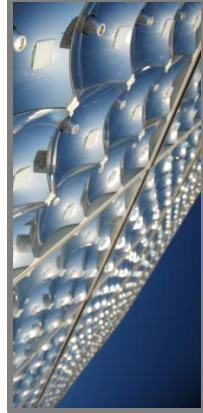


Advances in many sustainable technologies critically depend on our ability to design and realize nanomaterials with optimal properties

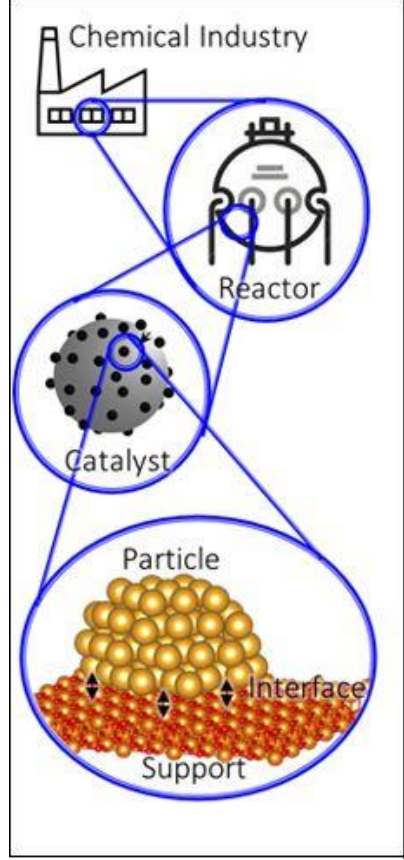
batteries



solar cells



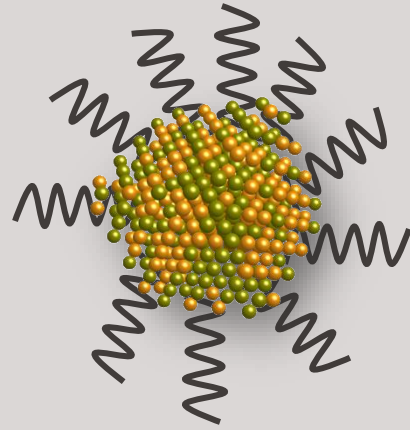
opto-electronic devices



catalysis

EPFL The tunability of colloidal nanocrystals enables the discovery of new phenomena and provides technological solutions

Quantum dots



< 100 nm

Inorganic core + ligand shell

(ligands =
carboxylic acid, thiols, amines, etc..)

Noble metals



EPFL Synthesis of colloidal nanocrystals



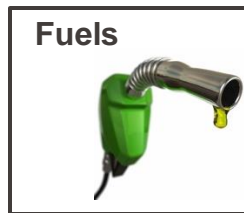
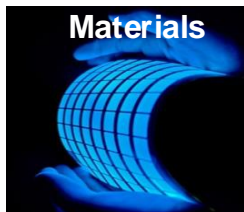
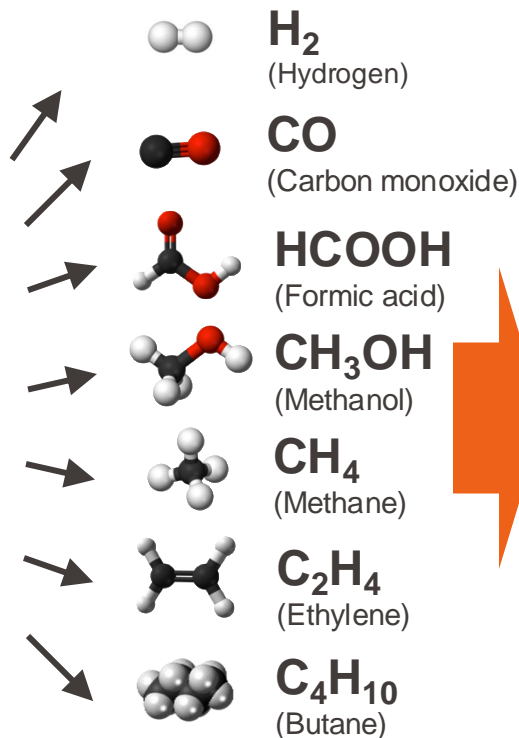
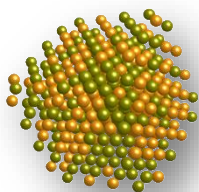
Colloidal nanocrystals for CO₂ utilization: turning trash into treasure



electricity

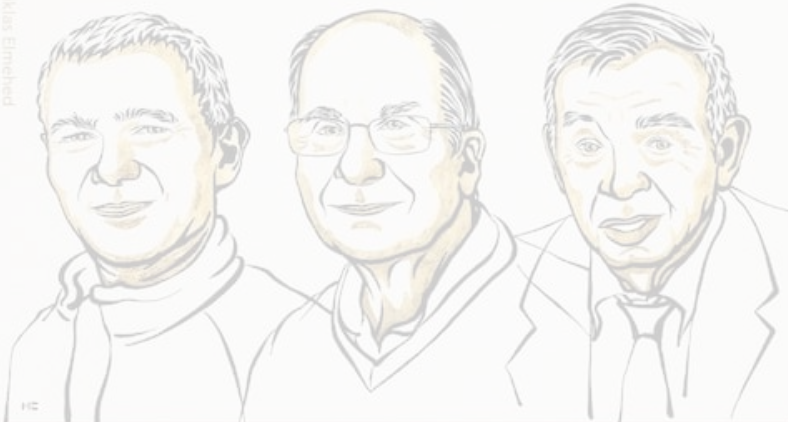
CO₂/H₂O

CATALYST



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4th year: Machine learning for physicists (option)
AI for chemistry (option)

3rd year: Modeling lab

2nd year: Practical programming in Chemistry (nouveau)

1st year: Information, Computation, Communication

- Information

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