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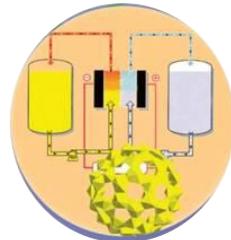
Roles and challenges of chemistry for sustainable development



transports



sea



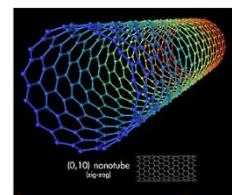
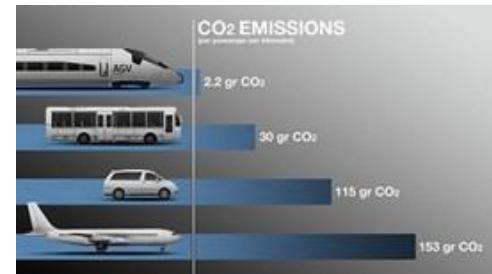
energy issues



health

Sustainable transports

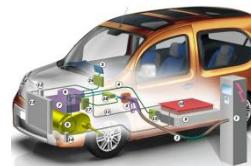
Chemistry & transports



New materials



New fuels

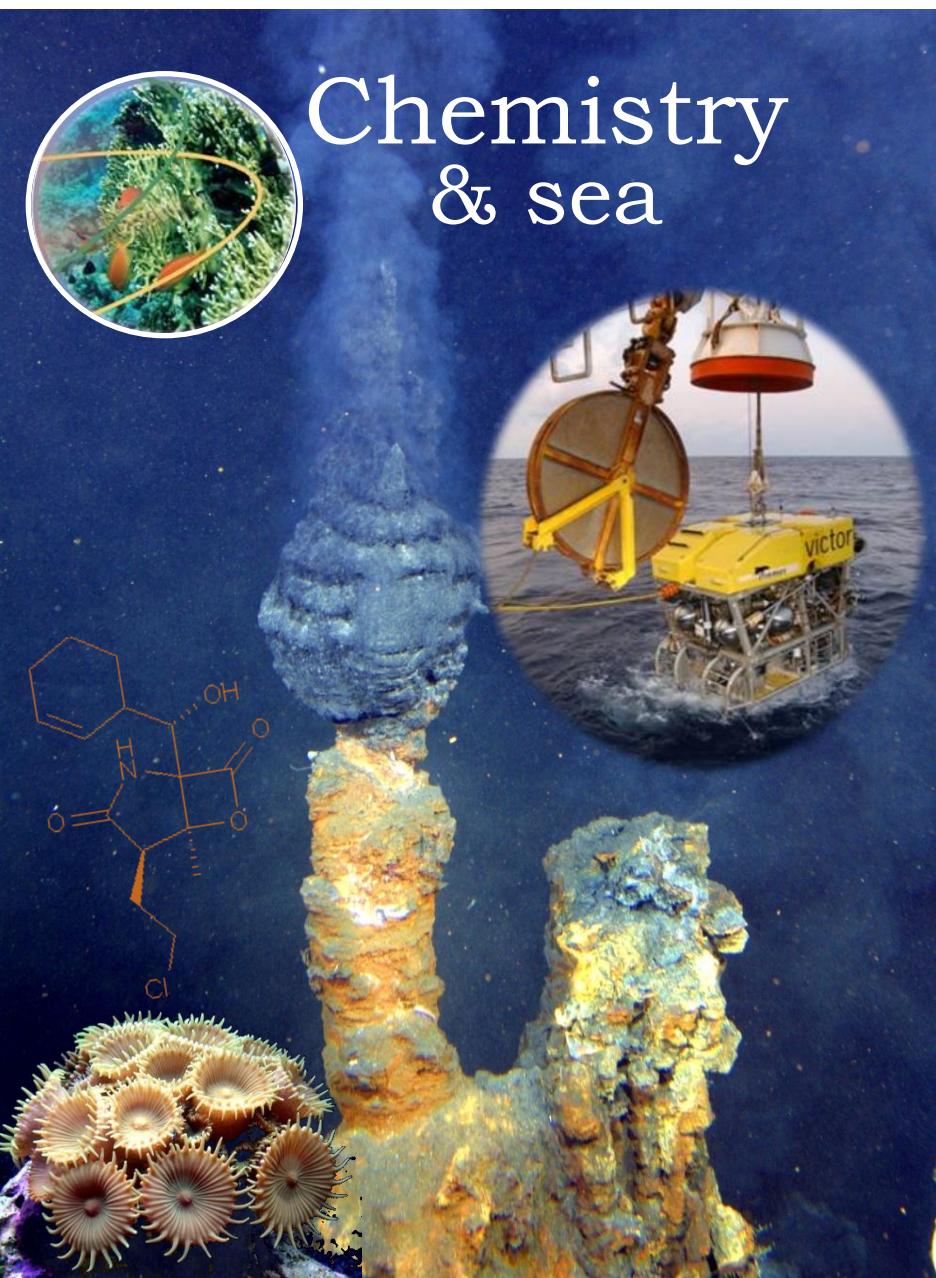


New batteries



Catalytic converters

Roles and challenges of chemistry

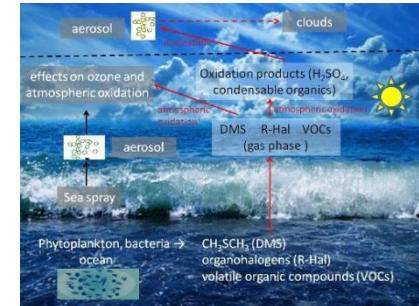


Chemistry & sea

Understand the sea



Chemical reactor

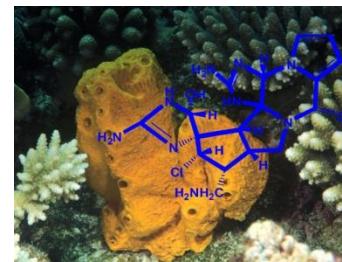


Infinite number of chemical reactions and exchanges

Climate (CO_2)

Emergence, preservation of the life

Use the resources of the sea



The drugs of the sea



Energy resources

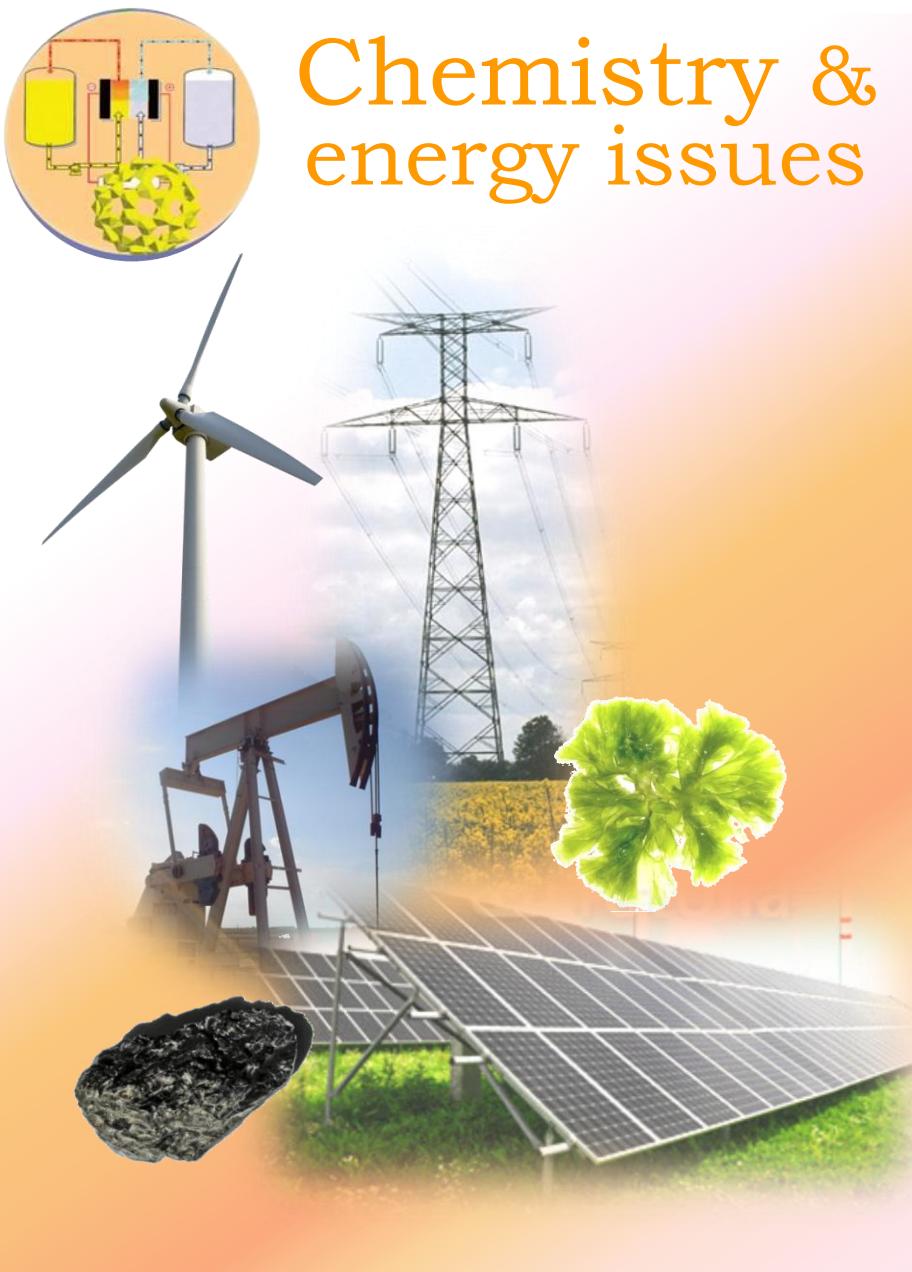


Mineral resources

Help the sea

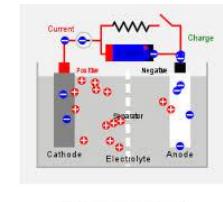
Chemical oil dispersants

Chemistry & energy issues



Future-oriented technology

Types of Biomass	
	Wood fuel
	Rubbish
	Alcohol fuels
	Crops
	Landfill gas



Energy Storage



Photovoltaic cells



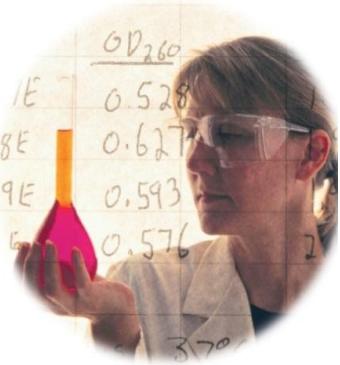
Nuclear reactor
Nuclear waste



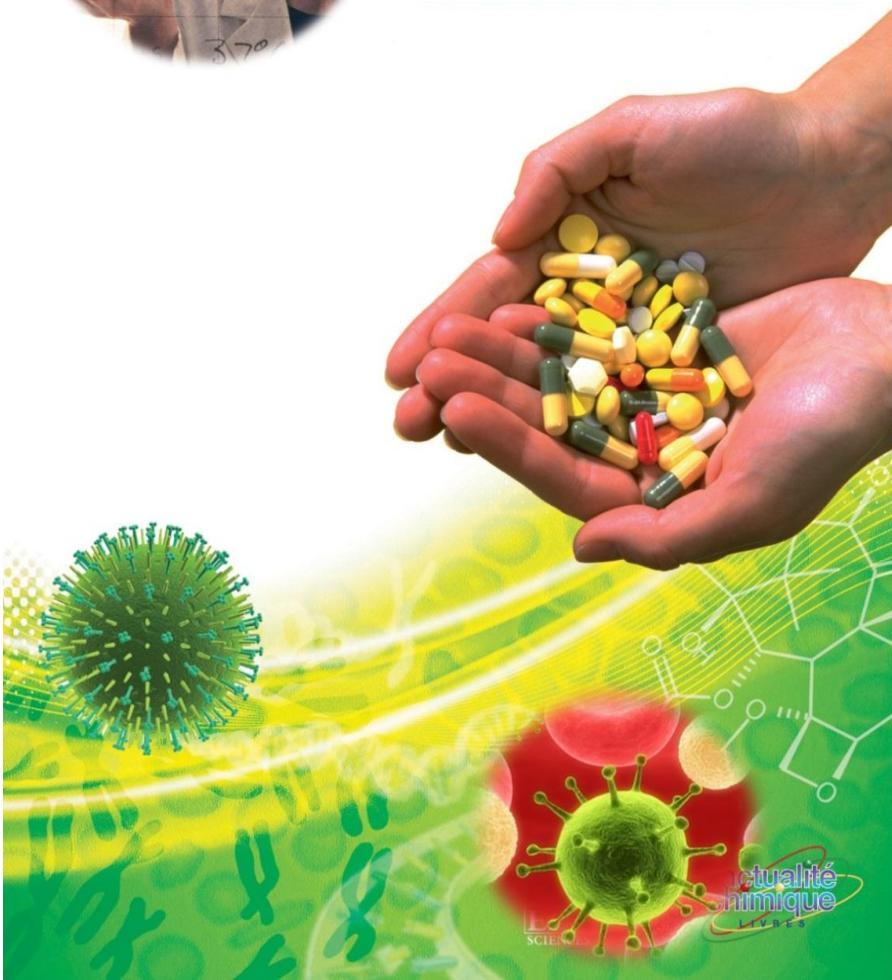
Energy transport



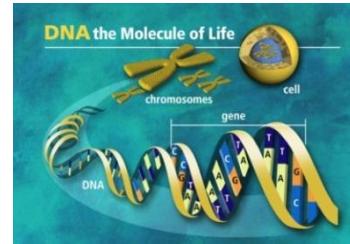
Electronic chip



Chemistry & Health



- Learn more about the living

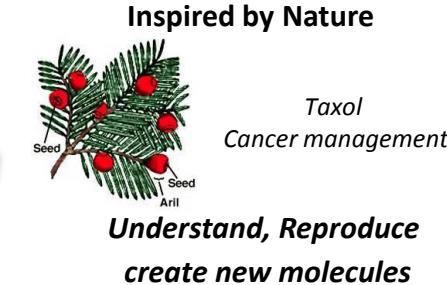
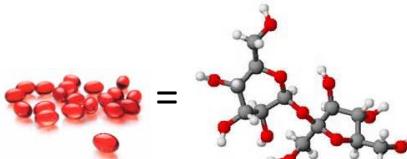


From DNA to the life
Millions of chemical reactions



New chemical tools
for diagnosis (MRI)

- Treat the living



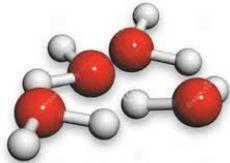
Imagine new chemical
tools to treat



- An example of sustainable chemistry

Multistep synthesis thanks to metal catalysts

Simple molecules



Palladium , Rhodium



drugs

Problem:

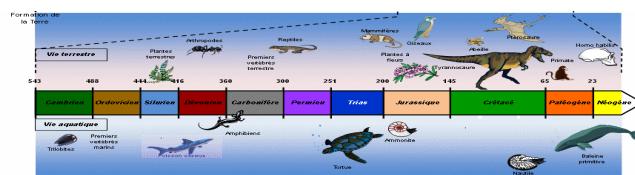
Palladium , Rhodium

Very toxic



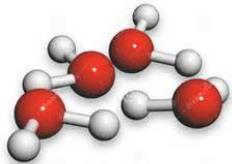
Why ?

Evolution of the life without them



Multistep synthesis thanks to metal catalysts

Simple molecules



Palladium , Rhodium



drugs

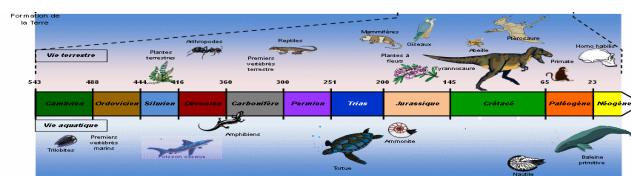
Problem:

Palladium , Rhodium

Very toxic

Why ?

Evolution of the life without them



Idea ?

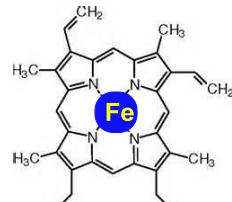
Iron , Copper

Much less toxic

Why ?

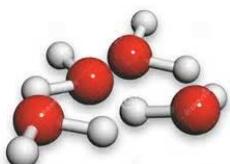
Evolution of the life with them

blood



hemoglobin

Solution



metal catalysts

Iron , Copper

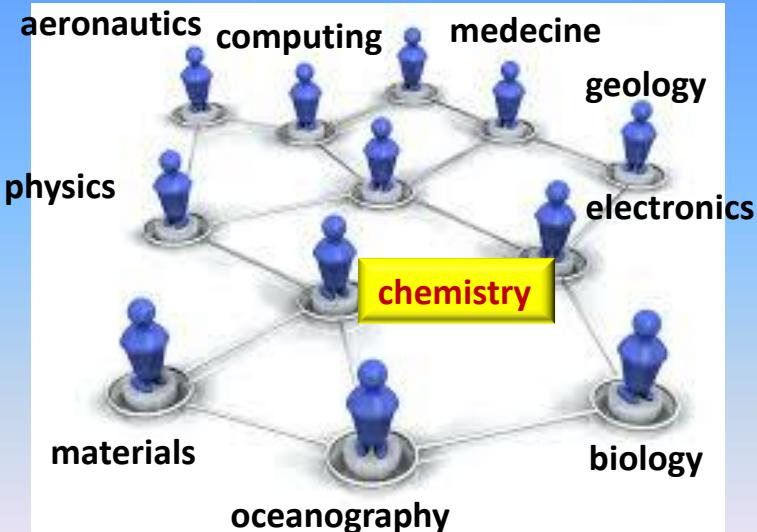


The world's most commonly administrated drug for management of breast cancer

For efficient and general sustainable development
Research and innovation of all the sciences have to be supported

Place of chemistry

At the crossroad
of sciences



Key discipline with a direct impact
in the daily-life and in the industry

