Destination Chemistry

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Chemistry

Medicinal Chemistry & Chemical Biology

Chemistry and Maths Education

Chemistry with Biophysical Chemistry

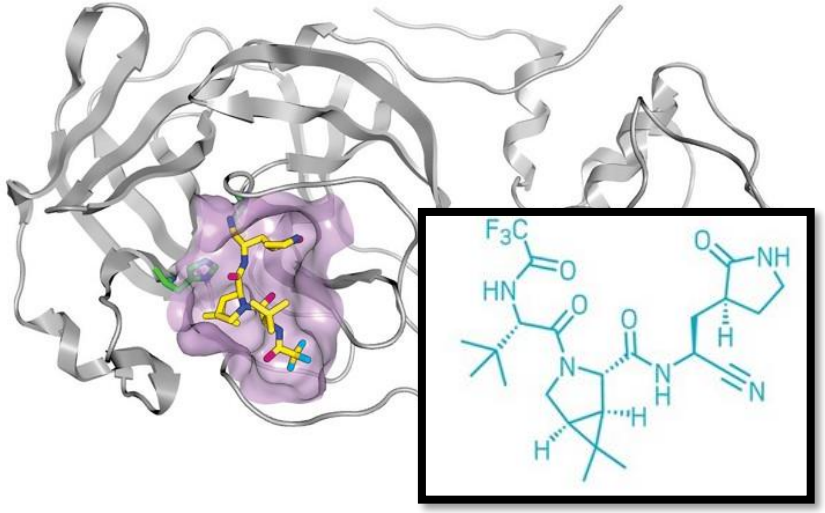
Chemistry with Sustainable & Environmental Chemistry

Stage 3 Advisory Session

Chemistry Meeting the World's Challenges

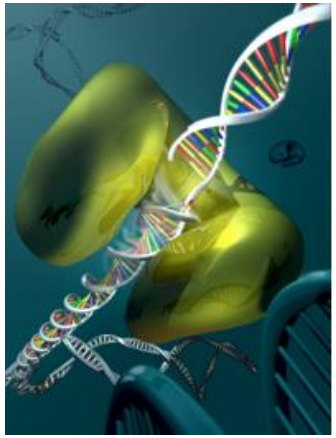
Curing disease

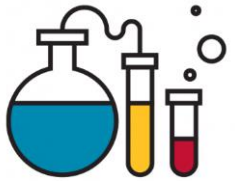
Paxlovid, Pfizer's oral COVID-19 treatment



Diagnosis

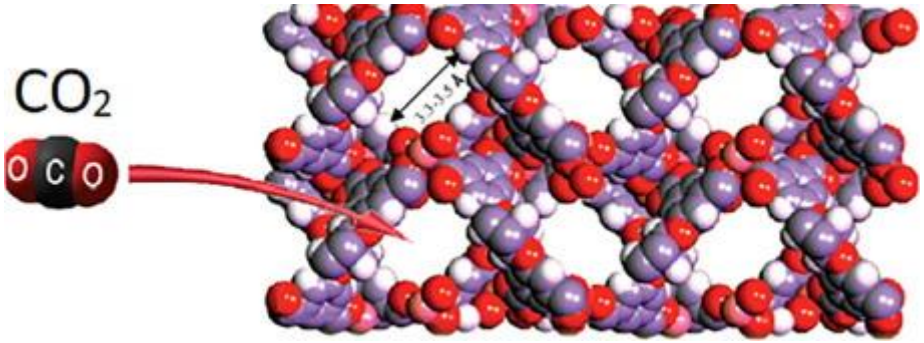
Next generation sensors





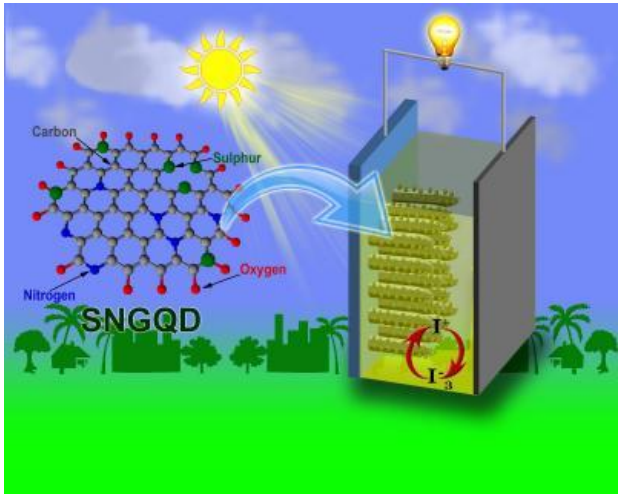
Climate Change

Metal Organic Frameworks



Renewable Energy

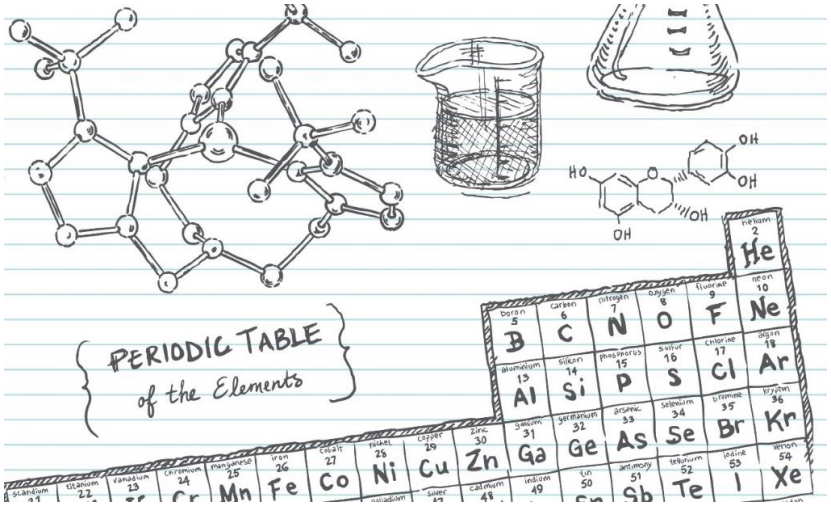
Light harvesting

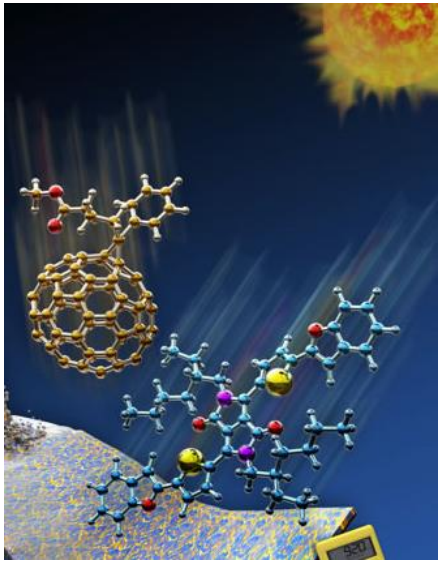


Chemistry

Chemists

- **Investigate** the natural world, e.g. they study the structures and properties of naturally occurring substances in the environment and in living things.
- **Invent** new substances to solve problems, e.g. they design and synthesise new medicines and new materials

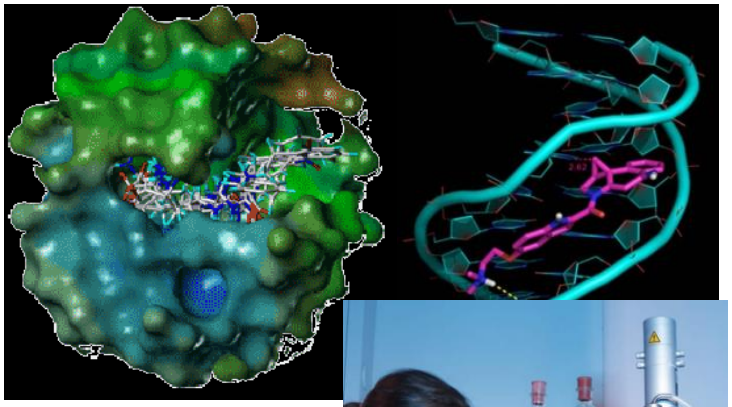




It's easy to overlook how reliant we are on the products made by chemists!

Medicinal Chemistry & Chemical Biology

Chemical biology is the use of chemical concepts and techniques to understand the chemical basis of life.



Medicinal chemists develop new more effective and more selective medicines, and more efficient and sustainable methods for manufacturing drugs, e.g. using biotransformations.

Take about ⅔ of the modules of a chemistry degree programme along with modules in Biological subjects (some in Stage 1) and dedicated modules (including a research project) in Medicinal Chemistry and in Chemical Biology.

Chemistry with Environmental & Sustainable Chemistry

Environmental - explain the chemistry behind air, water and soil pollution and develop techniques to address them.

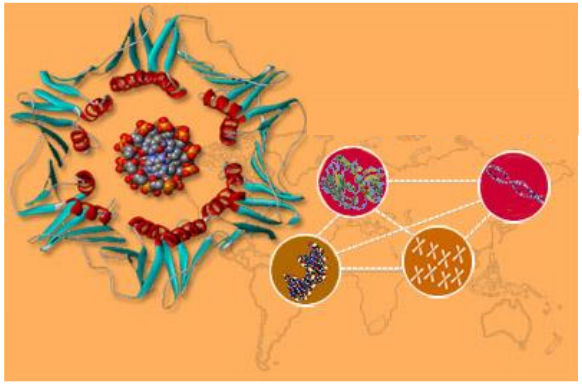
Sustainable – chemistry to replace petroleum as a fuel and as a feedstock.

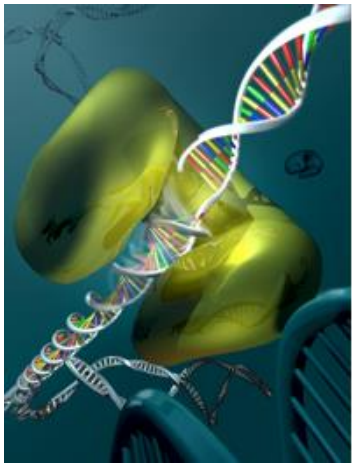
Green - modify current pharma/chemical processes making them cleaner and less energy dependent

Take all the modules of a chemistry degree programme with dedicated modules (including a research project) in Green, Environmental or Sustainable Chemistry.

Chemistry with Biophysical Chemistry

- The best chemical technologies of our world are utilised in biological systems, where thousands of chemical transformations take place in a well controlled manner, environmentally friendly and in a tiny space (biological cells).





Study the molecular principles organization and functioning of living matter.

Learn the applications of these principles in biomedical, biotechnological, pharmaceutical, food and related industries.

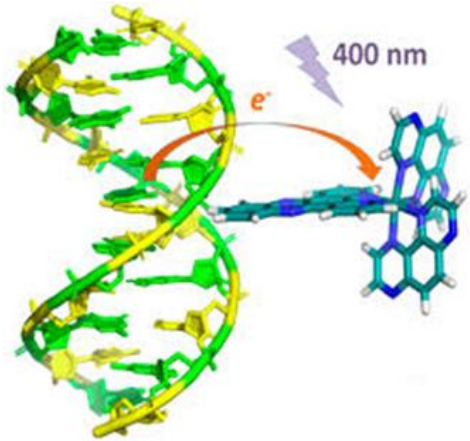
Take all the modules of a chemistry degree programme with dedicated modules (including a research project) in Biophysical Chemistry.

Code	Title	Chem	Env	Biophys	MCCB
CHEM30060	Quantum Mechanics	C	C	C	
CHEM30110	Instrumental Analysis	C	C	C	O
CHEM30200	Carbonyl Chemistry & Synthesis	C	C	C	C
CHEM30210	Struct Determ & Heterocyc Chem	C	C		C
CHEM30220	Mechanism and Stereochemistry	C	C	C	C
CHEM30230	Symmetry & Computational Chem.	C	C	C	
CHEM30240	Main Group Chemistry & Bonding	C	C	C	O
CHEM30250	Organometal & Solid State Chem	C	C		
CHEM30260	Chem Bio of Nat Products				C
CHEM30270	Chem. Biology of Macromolecules				C
CHEM30280	Medicinal Chemistry (level 3)				C
CHEM30310	Soft matter & interfacial chem	C	C	C	
CHEM30320	Chemical thermody & Phys Tran	C	C	C	
CHEM30090	Chemistry of Materials	O	O		
CHEM20030	Functioning of Biomolecules	O			
CHEM20110	Env & Sustainable Chem.	O			
CHEM30190	Chemistry of Biomolecules	O			
			Options in BSEN, ENVB	Many options	Options in BMOL, MICR, PHAR

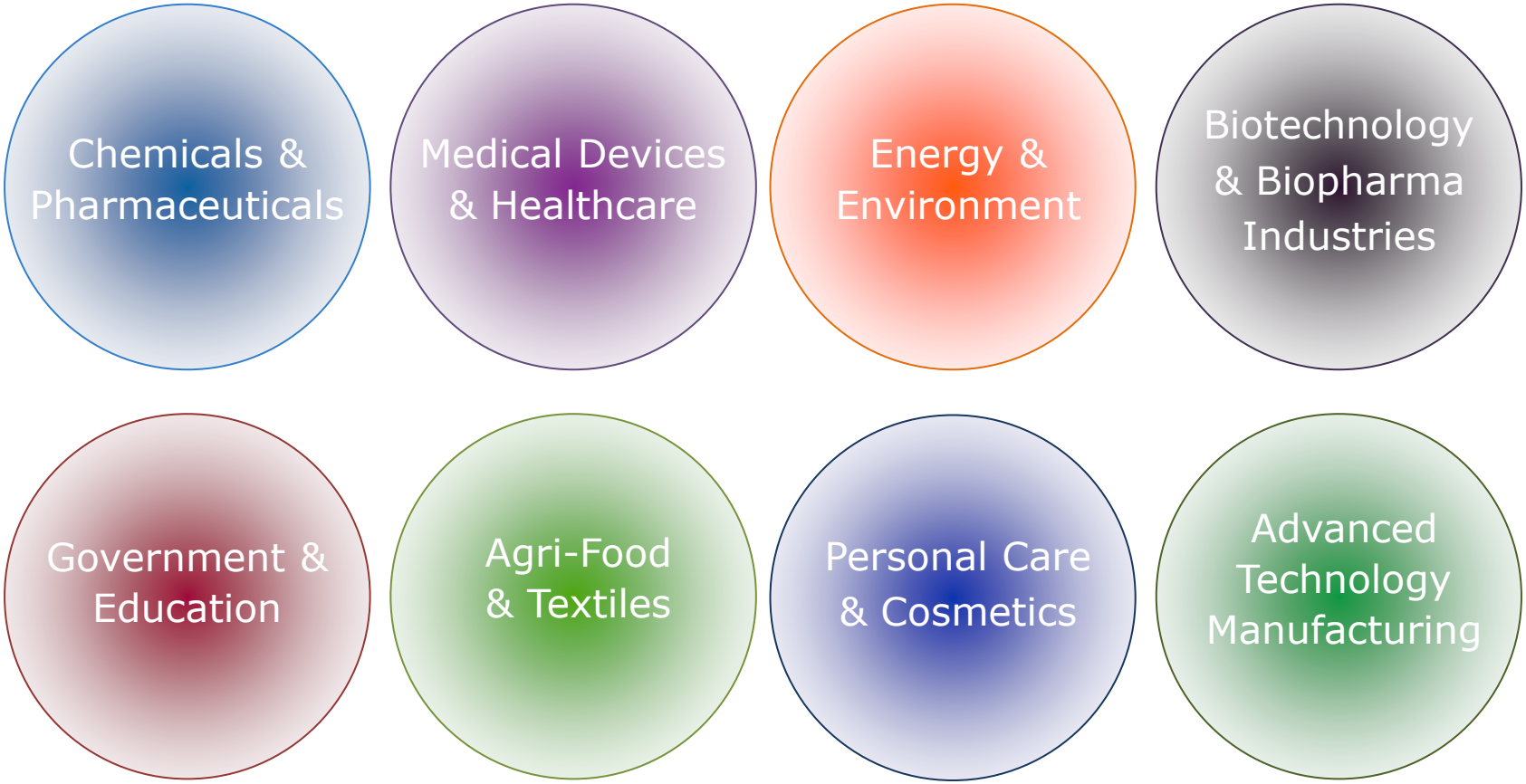
Stage 4 & Beyond

- Final Year Research Project (18 weeks, 20 credits) in all programmes. FYP ‘embedded’ in research labs in a wide variety of topics.
- Option to take Placement module.
- Variety of core and optional modules depending on programme.

- About 30% of our graduates go on to higher degrees, most in Chemistry
- Employment levels are very high – the pharmaceutical sector in particular is virtually recession-proof.

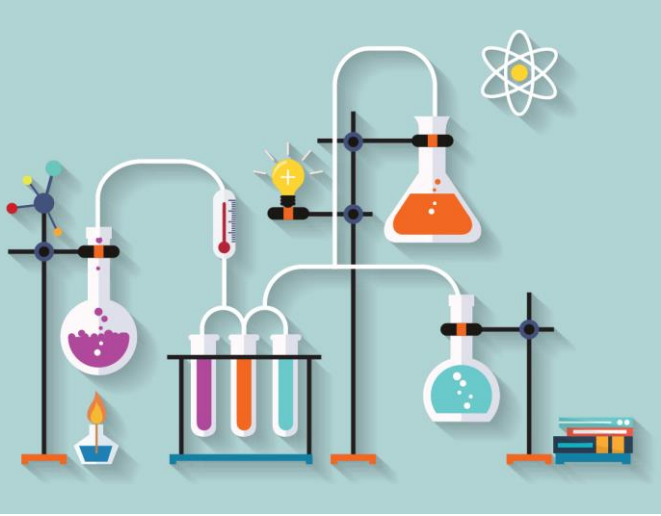


Career Opportunities: Sectors



Huge Opportunities

Meeting the world's challenges one molecule at a time



UCD DUBLIN

Chemistry

Questions susan.quinn@ucd.ie

Ask your lecturers and talk to stage 4 students!!