

Both Chemical Biology as well as Composite Materials have their roots in Organic Chemistry

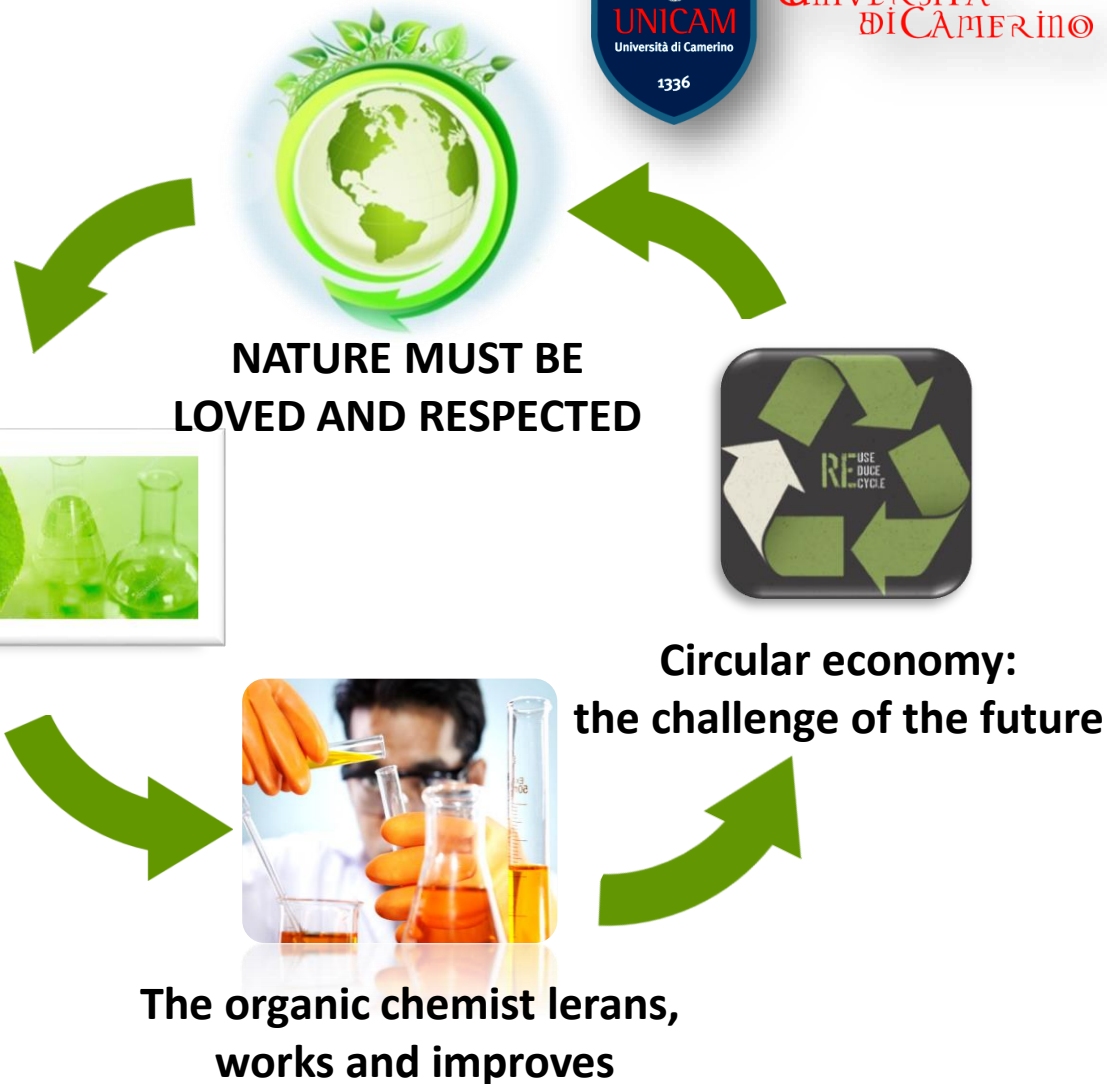
TOGETHER WE CAN DO IT

**Marcantoni Enrico
Cimarelli Cristina
Gabrielli Serena**

**PhD: Pastore Genny, Gentili Dario,
Leone Ezio, Roberto Giacomantonio,
Martina Lippolis, Tommaso
Compagnucci, Elena Menichetti**

**Nature is the teacher
of the organic chemist**

**Where Nature finishes producing
its own species, man begins, using
natural things and with the help of
this nature, to create an infinity of
species. (Leonardo da Vinci)**

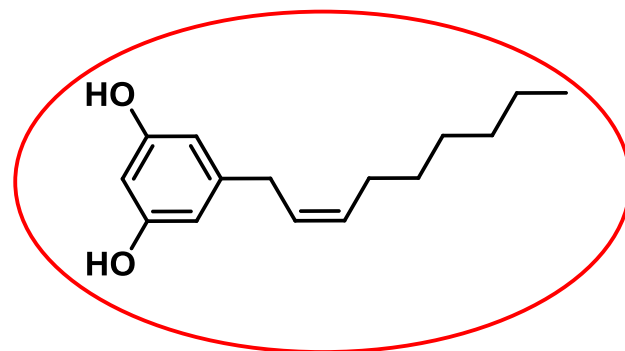


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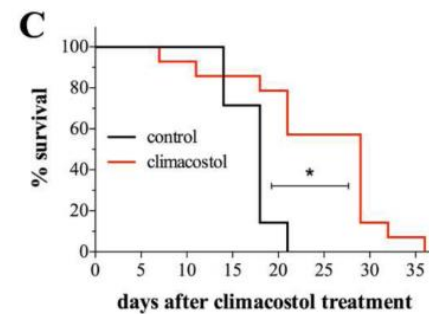
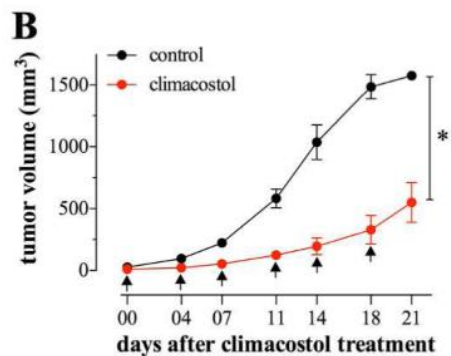
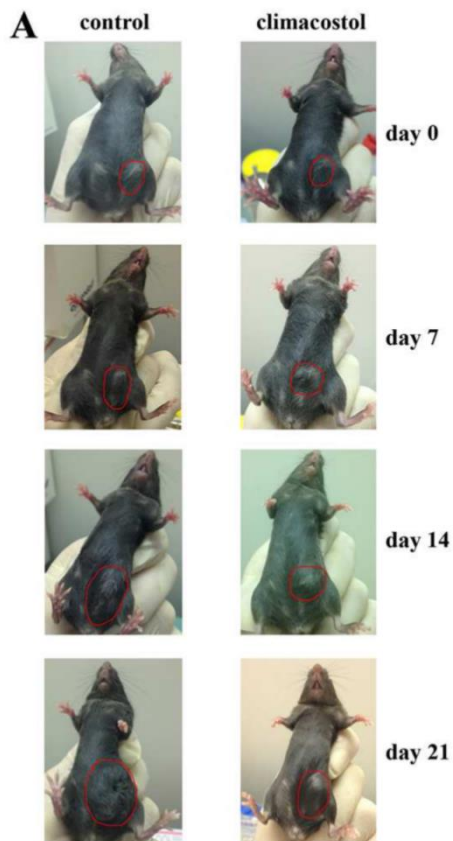
*Climacostomum
virens*



control



climacostol



Advanced Materials Industry

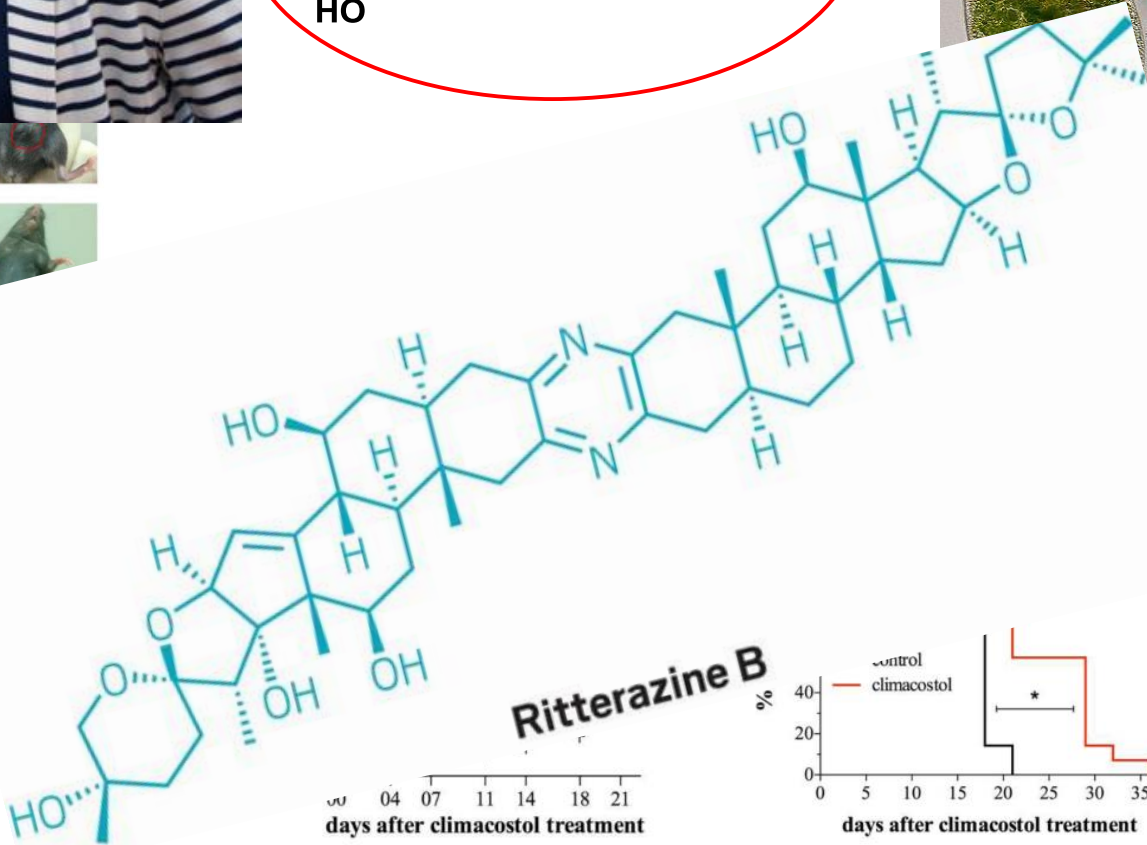


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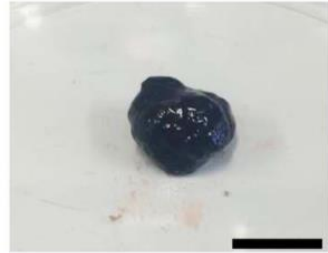
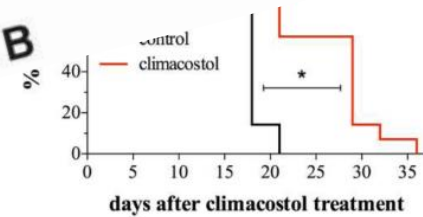


HO

*Climacostomum
virens*

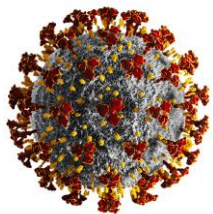


00 04 07 11 14 18 21
days after climacostol treatment

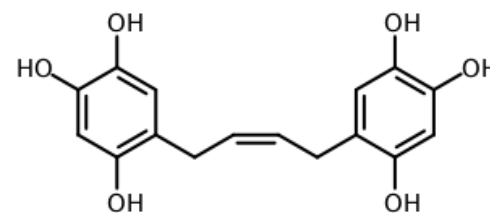
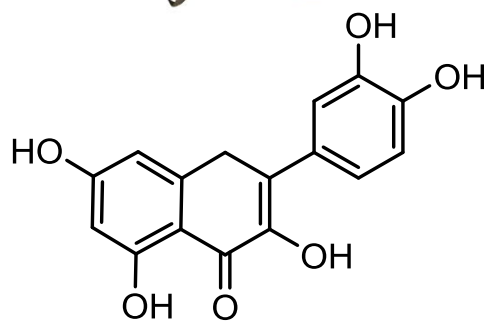


climacostol

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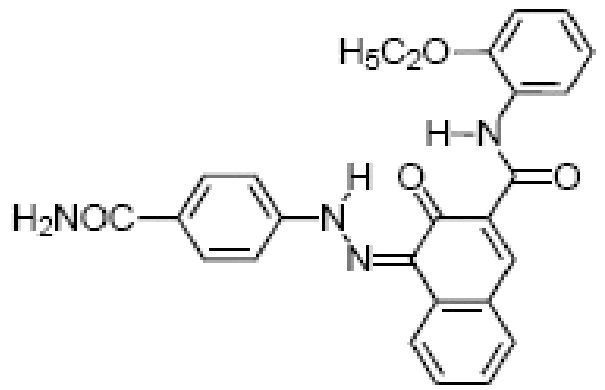
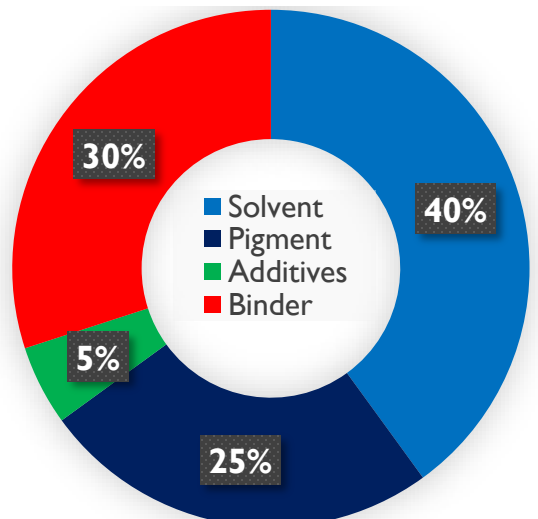
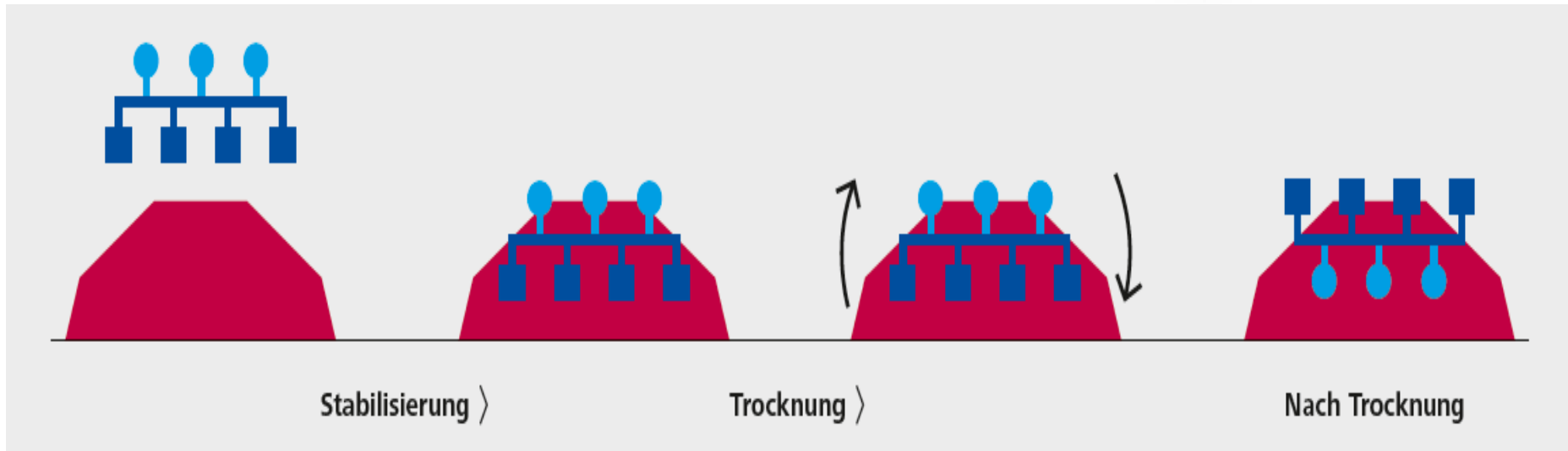


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Waterborne paints composition



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Cristina Cimorelli

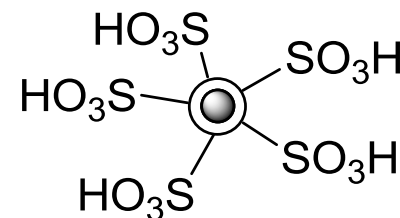


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What I work on? (2)

Study and development of greener synthetic methods based on Lewis Acids catalysis for the synthesis of synthetic intermediates or biologically active small molecules.

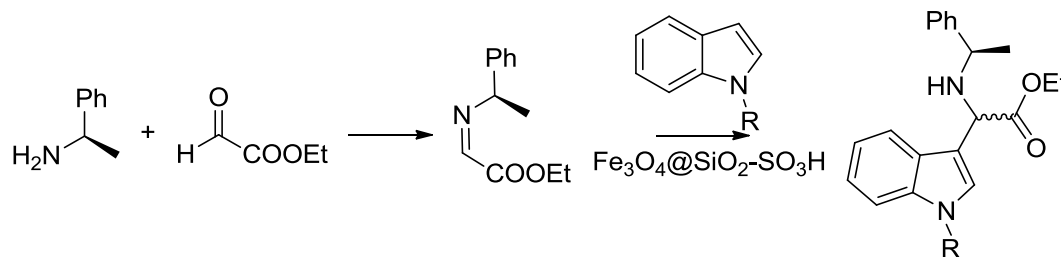
Another example concerns nanoparticles. We have prepared a solid Bronsted acid supported on the silica shell of a ferromagnetic nanoparticle



The catalyst has the advantages

- of a magnetic nanoparticle, that is a wide surface area joined with an easy removal of the catalyst from the reaction mixture by the application of a magnetic field*
- of a supported Bronsted acid, that is no need of neutralization of the reaction mixture and reusability*

This catalyst has been applied to the diastereoselective synthesis of triptofane derivatives

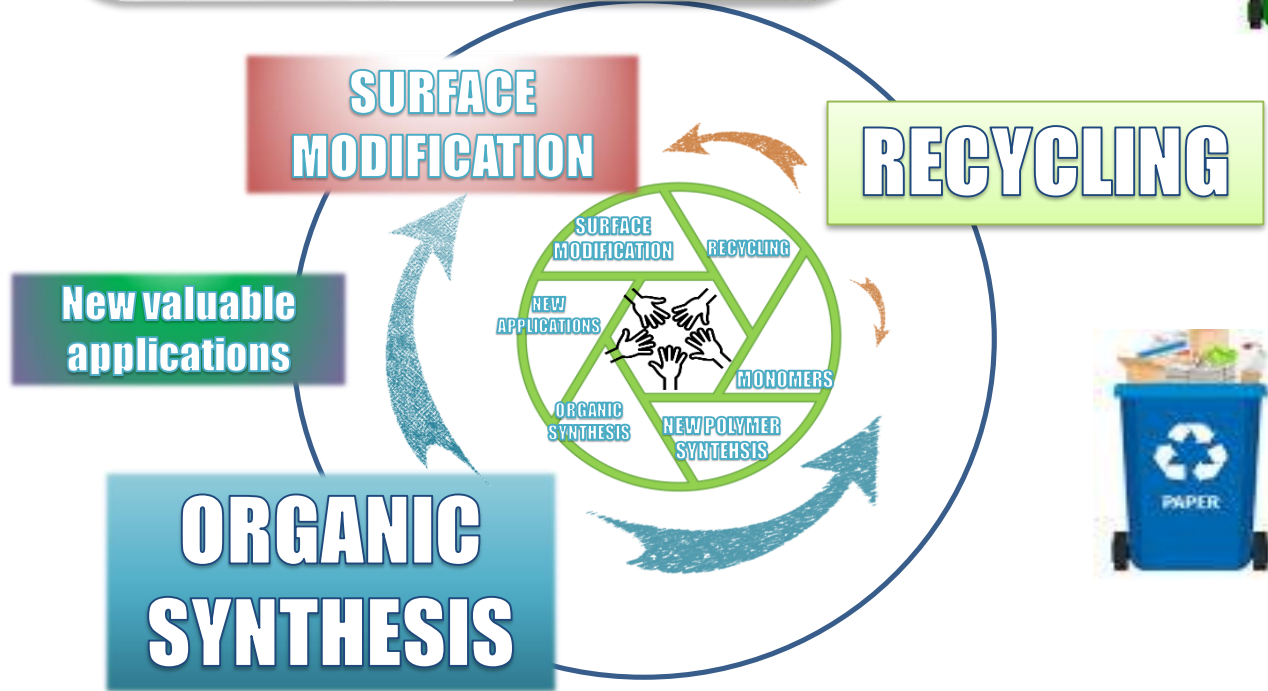
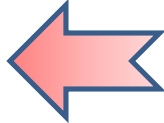
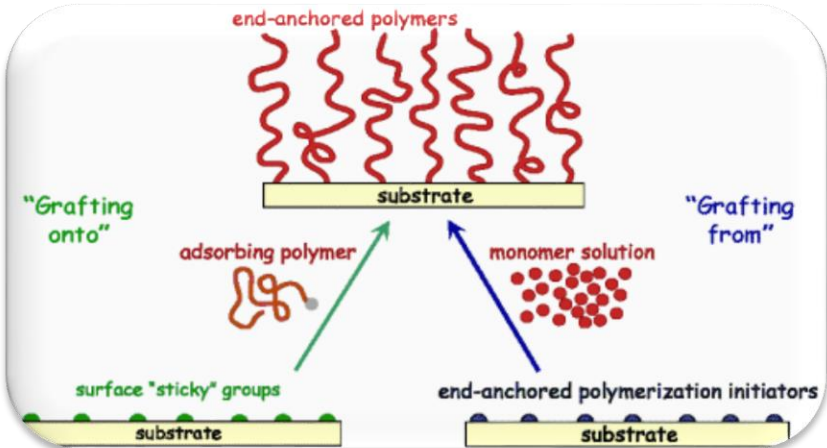


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Serena Gabrielli



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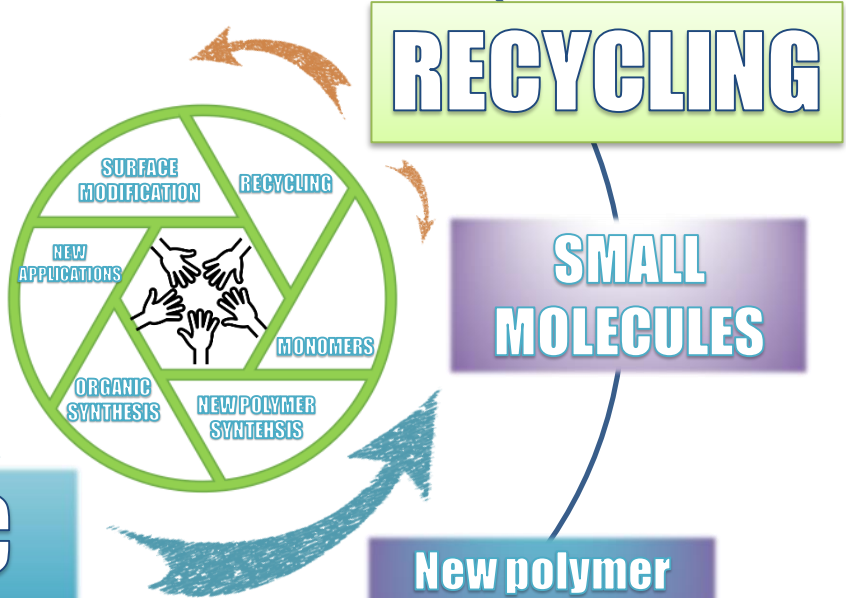


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New valuable applications

ORGANIC SYNTHESIS



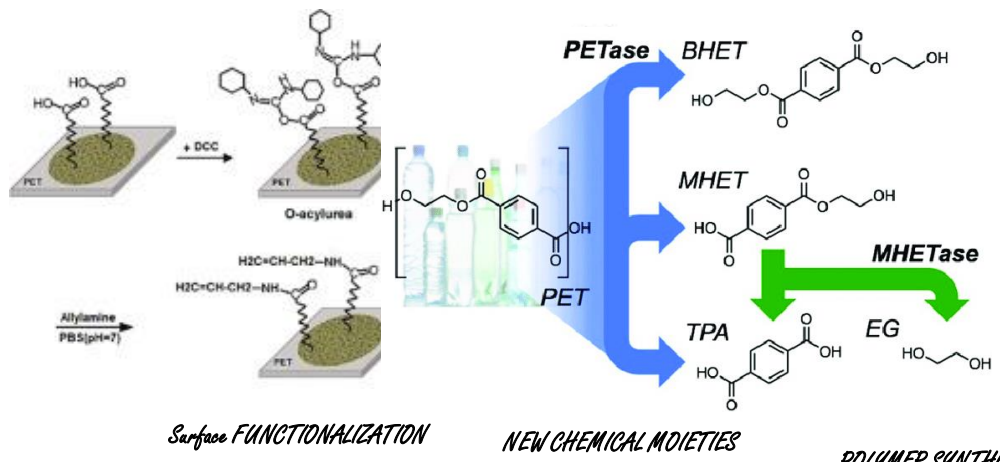
New material synthesis

Serena Gabrielli

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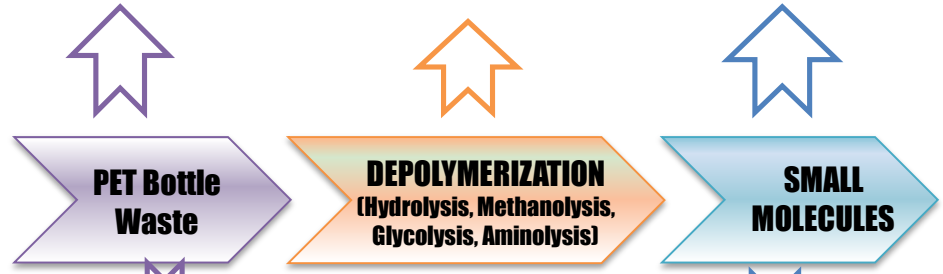
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New polymer synthesis



New valuable applications



BIO-BASED POLYMER SYNTHESIS



Serena Gabrielli

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Genny Pastore

Ph.D. Student

Years: 28

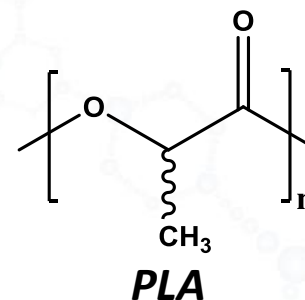
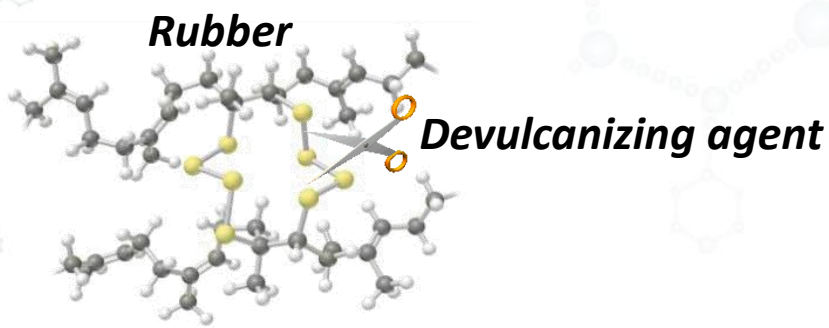
Graduation: Chemistry and Advanced Chemical Methodologies

Why a degree in chemistry?

After completing my high school studies, the only discipline that attracted my attention was chemistry. Hence the choice to deepen this science at the university. Over the years I had the opportunity to study it both theoretically and practically, becoming passionate about this subject day after day.

What I work on?

Development of a sustainable method for the recycling of industrial rubber waste and synthesis of bio-based polymers for biomedical applications.



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roots in Organic Chemistry



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Years: 27

Graduation: Chemistry and Advanced Chemical Methodologies

Why a degree in chemistry?

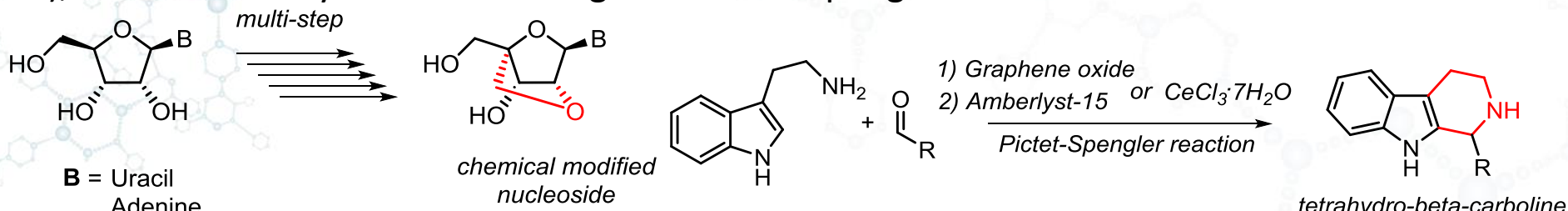
Chemistry has been a passion I've always had. With the studies done here in Camerino, between bachelor years and master's, I was able to study in deep this subject, going to better understand many phenomena that occur in nature and many others in every day life.

Dario Gentili

Ph.D. Student

What I work on?

In my PhD course I am studying the branch of chemistry that concerns the synthesis of small molecules with biological activity, such as 2'-4'-LNA or tetrahydro- β -carboline. The LNAs are nucleobases that are chemically modified to improve their chemical stability, and they can be used as carrier drugs, in the therapeutic field, or in the diagnostic field; the second ones are very widespread molecules in nature with different biological activities (antispasmodic, anticancer, etc.), which can be synthesized through the Pictet-Spengler reaction.



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Years: 27

Graduation: Chemistry and Advanced Chemical Methodologies

Why a degree in chemistry?

My interest in chemistry started when I was in high school since I did a technical institute with specialization in chemistry. This has matured in me the desire to continue my studies, specifically, to expand my knowledge of chemistry. During my university years I had the opportunity to work more in the world of chemistry especially during thesis work.

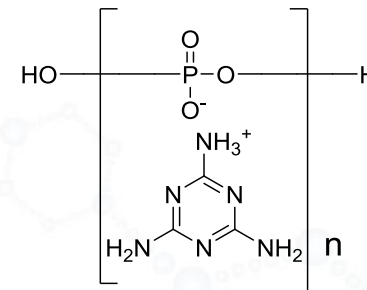
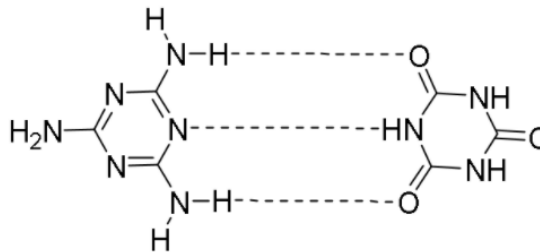
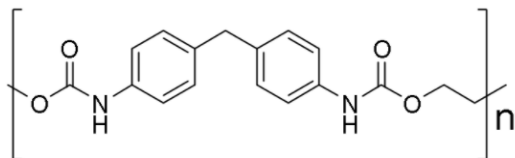
Roberto

Giacomantonio

Ph.D. Student

What I work on?

Chemical analysis of polymeric materials, in the world of lighting with LED sources to improve durability and to have a lower environmental impact.



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**Tommaso
Compagnucci**
Ph.D. Student

Years: 26

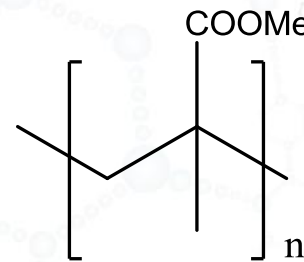
Graduation: Chemistry and Advanced
Chemical Methodologies

Why a degree in chemistry?

To better understand matter and the world around us.

What I work on?

Synthesis of TiO_2 nanoparticles doped with metal ions for use in composite materials (kitchen sinks, formed by PMMA and inorganic fillers) in order to obtain new innovative photocatalytic properties.



PMMA

=

PolyMethylMethAcrylate

*In collaboration
with*

PLADOS  **TELMA**

THE SINK THAT BREATHES

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Ezio Leone

Ph.D. Student

In collaboration

with



Years: 28

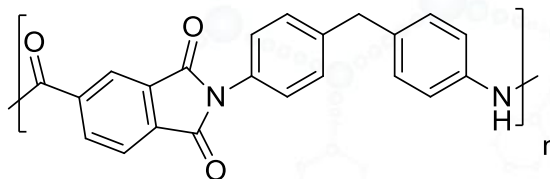
Graduation: Chemistry and Advanced Chemical Methodologies

Why a degree in chemistry?

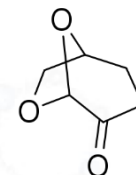
The world of science has always fascinated me, I am driven by curiosity and by understanding what surrounds us.

What I work on?

I work in the sector of polymeric materials used for electrical and electronic insulation. In particular, my work focuses on the research and development of polyamides-imides and polyimides synthesized in bio-based and sustainable solvents.



Polyamide-imide



Cyrene

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Years: 25

Graduation: Chemistry and Advanced Chemical Methodologies

Why a degree in chemistry?

Idea of being able to combine different elements of periodic table in order to create an object or a substance capable of contributing, even if in a small part, to the improvement of human life or of the environment is an incredible opportunity, and that has always fascinated me since I was a teenager!

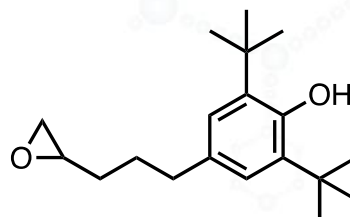
Martina Lippolis

Ph.D. Student

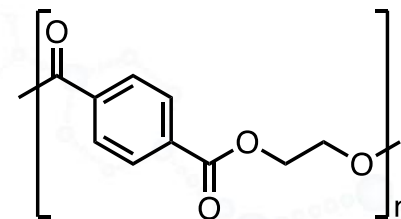
What I work on?

I work on the functionalization of polyethylene terephthalate (PET) by adding an antioxidant molecule with the aim of creating a food packaging capable of extending the shelf life of food.

In collaboration with
guzzini 



Antioxidant



PET