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# CELISE: Kick-off meeting

## Presentation of partner: AUTH

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*Aristotle University of Thessaloniki*



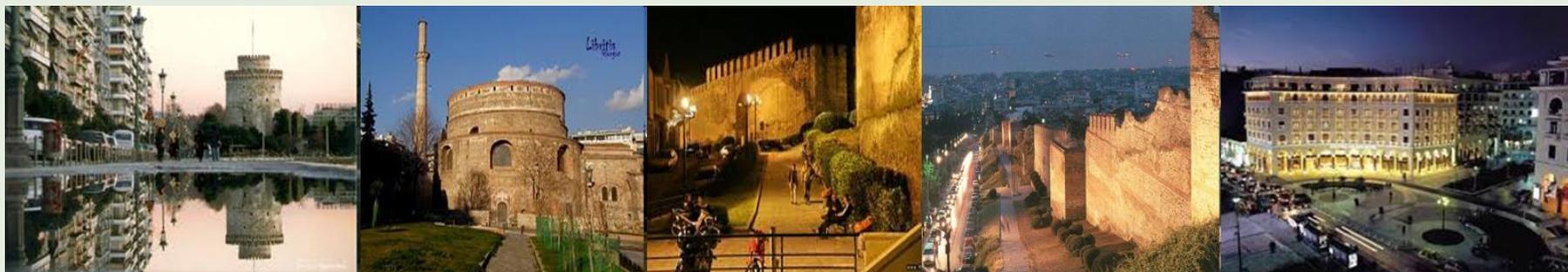
ARISTOTLE  
UNIVERSITY  
OF THESSALONIKI

23 November 2021



# Aristotle University of Thessaloniki

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## Thessaloniki, Greece:

The metropolitan center of Northern Greece with a history of 2,300 years, resonating the wealth and magnificence of the Byzantine empire

**The Aristotle University of Thessaloniki** is the largest university in Greece, with more than 72.000 undergraduate and 8.300 postgraduate students. The University (main) Campus covers about 23.000 m<sup>2</sup> close to the centre of Thessaloniki. Studies and research at AUTH is organized into 11 Schools and 41 Departments, covering almost all scientific disciplines.

The **School of Sciences** is one of the founding units of AUTH (1925) and the **Department of Chemistry**, founded in 1943, is engaged in all basic and applied chemistry sectors, including general and inorganic chemistry, organic chemistry and biochemistry, physical-chemistry, analytical and environmental chemistry, chemical education and informatics, and chemical technology and industrial chemistry.

23/11/2021





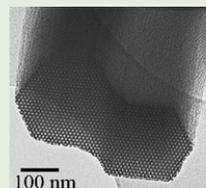
# Our group (Department of Chemistry)

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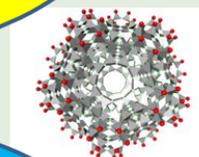
## CATALYSIS

- petroleum refining
- biomass valorization
- chemicals/fuels
- environmental



## MATERIALS

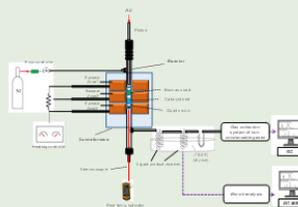
- micro/mesoporous solids
- (nano)metals & oxides
- functionalized solids
- polymer nanocomposites



## GREEN CHEMISTRY & TECHNOLOGY

## BIOMASS

- selective fractionation & conversion
- platform chemicals, fuels, plastics, pharmaceuticals



## SORPTION

- porous & functional sorbents
- water & fuels purification
- drug uptake/release

<http://ktrianta.webpages.auth.gr/>



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# Main expertise, capacities, (research) interests - AUTH

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## Main expertise & research interests related to CELISE:

- Analysis and characterisation of biomass and various forestry/agricultural waste materials;
- Hydrothermal Pre-treatment and selective fractionation of biomass;
- (Nano)cellulose production, modification and application as additive in resins, adhesives;
- Biomass pyrolysis and analysis of bio-oil and bio-chars (bio-char activation);
- LCA and technoeconomic analysis;
- This Institution has a great collaboration with ECORESOURCES

## Capacities related to CELISE:

- Lab, bench and mini-pilot (ca. up to 8 Lit) of stirred batch autoclave reactors for biomass processing/fractionation
- Micro pyrolyzer Py/GC-MS, bench scale fixed bed pyrolyzer (< 1 g), mini-pilot fluidized/fixed bed pyrolyzer
- Biomass/fractions characterization: carbohydrates and lignin composition, HPLC, ash, extractives, HHV, FTIR, XRD, TGA/DSC, NMR, ...
- Pyrolysis products (biooils/biochar) analysis: GC-FID, GC-MS, NMR, elemental analysis, biochar porosity and surface properties, ...
- Polymers/composites preparation and testing: FTIR, TGA/DSC, DMA, tensile, impact, SEM, XRD, ..
- LCA and technoeconomic analysis software tools



# Bio-based polymers and composites

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**BIOBASED  
NANOMATERIALS  
COMMUNITY**

**BIOMAC: European Sustainable BIO-based nanoMAterials Community**  
Horizon2020 project that will establish an Open Innovation Test Bed (OITB)



## 33 partners



#BIOMAC

Project Coordinator

ARISTOTLE UNIVERSITY OF THESSALONIKI

[www.biomac-oitb.eu](http://www.biomac-oitb.eu)

[biomac@chem.auth.gr](mailto:biomac@chem.auth.gr)

## Project details

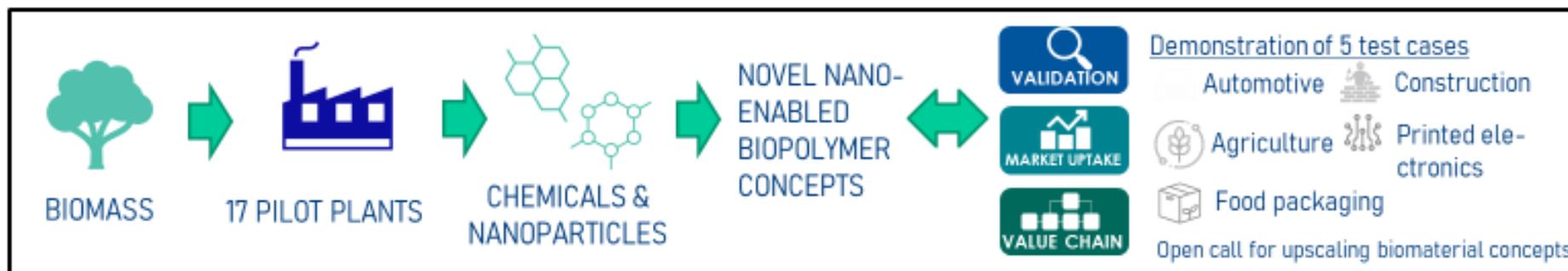
Start date: JANUARY 2021

Duration: 4 YEARS

EU contribution: 16.5 mil €

**Open Innovation Test Bed**

**in the field of nano-enabled bio-based  
materials and products**



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 952941



# Key staff participating in the project

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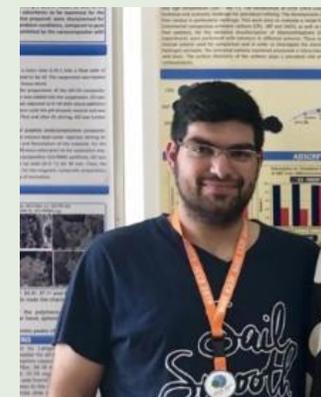
Konstantinos Triantafyllidis  
Chemist, Professor



Antigoni Margellou  
Chemist, Postdoc



Christina Pappa  
Materials Engineer, PhD student



Kyriazis Rekos  
Chemist, PhD student



Dimitrios Gkiliopoulos  
Chemist, Postdoc



Eleni Psochia  
Chemist, PhD student



Georgios Iakovou  
Chemist, PhD student



Sultana Ioannidou  
Chemist, PhD student

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Event/Activity

N°