

KET*

Focus on (*) Key Enabling Technologies - nanotechnologies, advanced materials, advanced manufacturing and processing

360

INNOVATE TOGETHER

27th June 2019 - Strasbourg - FRANCE

Project idea/ Field of expertise:

Smart and ecofriendly materials for building energy efficiency

Organisation Name:

University of Nantes
(a French higher education establishment)



UNIVERSITÉ DE NANTES

Adressed challenge(s)/ PPP(s):

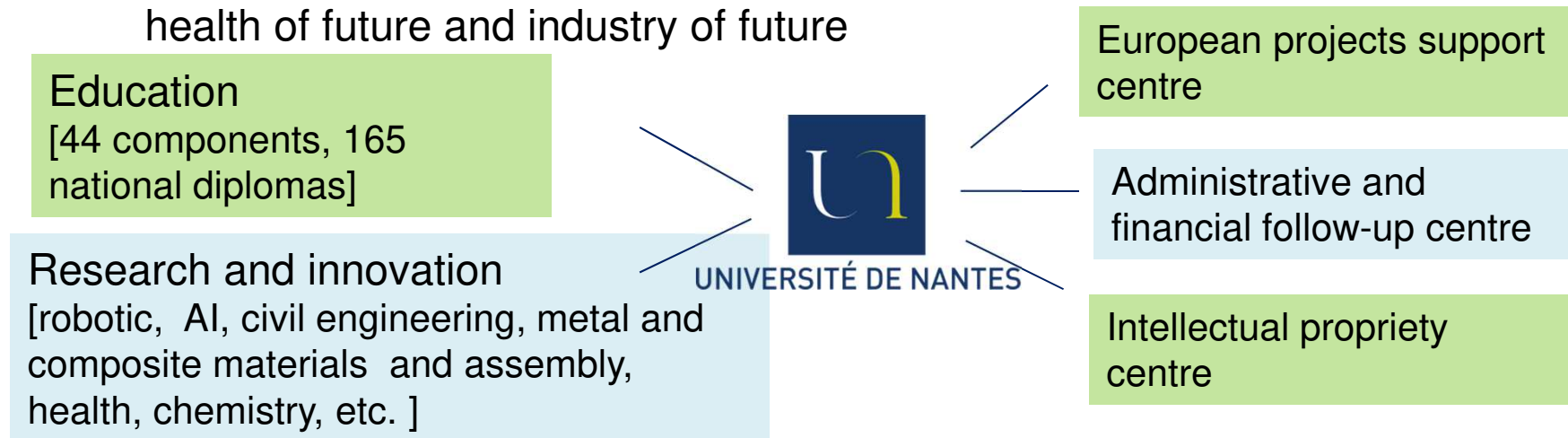
H2020-Energy Efficient Buildings/ interreg

Adressed topic(s) in Work Programme:

LC-EEB-04-2020: Industrialisation of building envelope kits for the renovation market (IA)

Université de Nantes/France

- **Reuters Top 100** Europe's Most Innovative Universities: 76 place
- **Academic Ranking World Universities:** it stands out in material science engineering (top 300)
- **I-Site** (Initiative- Science - Innovation - Territories – Economy) **label:** a mark of excellence for a project titled **Nantes Excellence trajectory** around health of future and industry of future



- Past experience in EU-funded projects : COMPOLEDES, NDT in air X5GON, TAPAS, COROMA, etc.

Our expertise

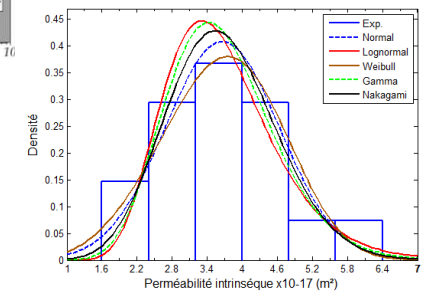
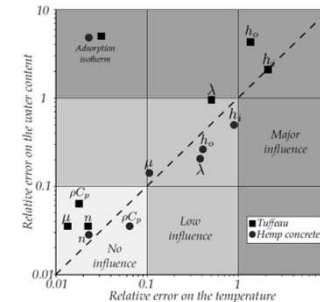


□ Greener buildings/infrastructure

- recycled aggregate (Construction Demolition Waste), polystyrene (light concrete), hemp, halfa, recycled carbon fiber (aeronautique demolition), raw earth, nanoparticules (SiO_2 , TiO_2 , Al_2O_3 , ZnO)
- optimized formula and process
- micro/macrostructure [**well known devices**: SEM, TGA, sorption isotherm, thermal proprieties, MBV, mechanical tests, durability tests **and original devices**: optic fiber and sensors for monitoring, coupled phenomena] to real scale : climatic chamber for a 2x3 m test wall, 100 T mechanical press]

□ Performant coupled heat and mass transfer

- sensitivity analysis , reliability approach : to determine influent parameters, modelisation of parameters variability , action lever in LCA approach
- refurbishment solution according to climate zone
- durability phenomena: condensation, mold developement,



Holistic solutions:
smart materials

Energy production:
converting energy component

Indoor Environmental Quality:
self cleaning construction materials

Contact details

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