



# BIOTRAFO



**RAISING KNOWLEDGE AND DEVELOPING TECHNOLOGY FOR THE DESIGN AND DEPLOYMENT OF HIGH-PERFORMANCE POWER TRANSFORMERS IMMERSSED IN BIODEGRADABLE FLUIDS**

THIS PROJECT HAS RECEIVED FUNDING FROM THE EUROPEAN UNION'S HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME UNDER THE MARIE SKŁODOWSKA-CURIE GRANT AGREEMENT NO 823969

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## PROJECT PROJECT

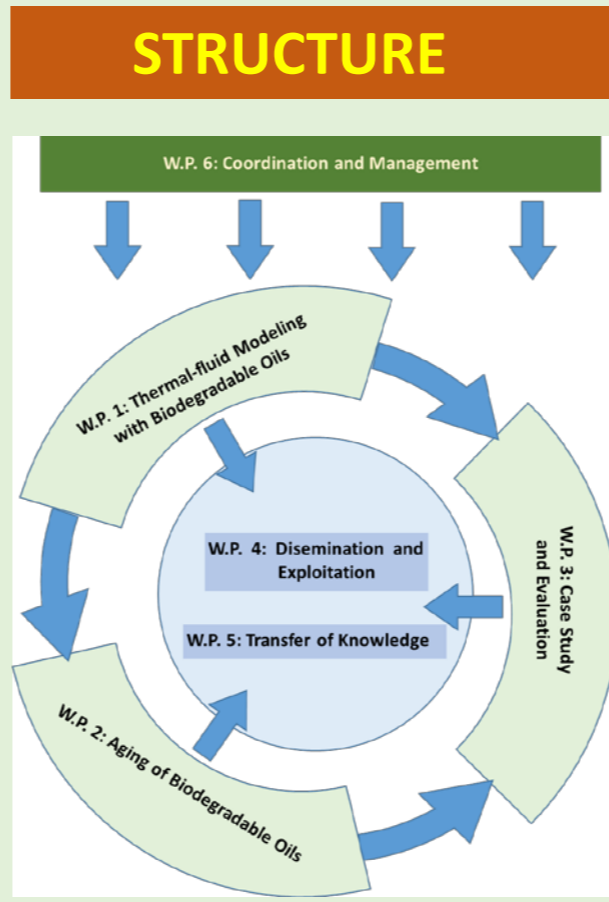
BIOTRAFO is a project funded by the European Programme known as Research and Innovation Staff Exchange (RISE), under a Marie Skłodowska-Curie grant agreement.

BIOTRAFO will analyze the effect of temperature on the designs of power transformers that use biodegradable esters as coolant, the environmental and fire performance of these liquids will be also evaluated.

The temperature is a critical factor for the useful life of the transformer, due to the aging of dielectric solid materials.

Currently the liquid used in most of these machines is a petroleum derivative. However, the environmental awareness of many companies is demanding new transformers that are cooled by esters of natural origin.

The project will also carry out tasks of knowledge transfer generated for this purpose, the training aspects of the research personnel involved in the project will be taken care of.



### TRAINING COURSES

- Winding geometries and specific characteristics of dielectric materials
- Design of experimental platforms
- Degradation assessment of dielectric paper and oil

### SEMINARS

- Design of windings
- CFD and THN modelling
- Moisture dynamics
- Ageing of materials
- Transformer maintenance
- Partial discharge
- Fire risk assessment
- Environmental impact
- Future of transformers
- Use of Salome

### WORKSHOPS

- Thermal-fluid modelling on power transformers (2019)
- Aging assessment of biodegradable oil (2020)
- Cooling, aging, environmental and fire performance of biodegradable ester: Case studies (2021)

## BENEFITS BENEFITS



- Reduce environmental impacts
- Increase of safety (reduce fire risks)
- Wide dissemination and Open Access
- Promote new innovative solutions
- International leadership in research
- Career boost and extensive networking

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