



APPLICATIONS:



ENERGY & TRANSPORT

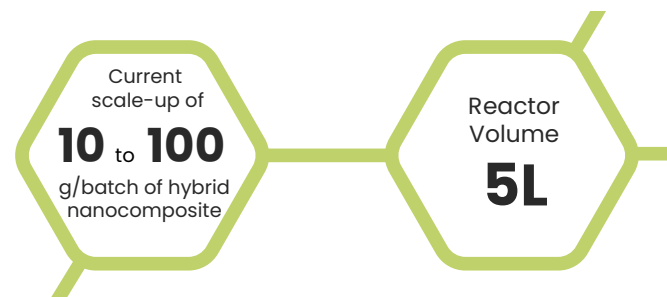
DEVELOPMENT:



NANO MATERIALS

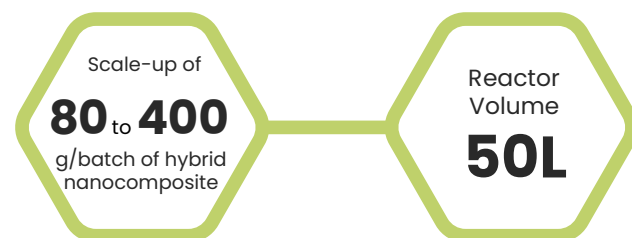
## CURRENT-STATUS

Manufacturing hybrid materials based on carbon material and metal oxide nanoparticles at preindustrial scale is complex and lab-scale procedures often cannot be scaled-up. Gnanomat has developed a novel technology for the generation of a new family of nanomaterials based on graphene and other forms of carbon from different biosources, combined with metal/metal oxide nanoparticles allowing the manufacturing of these family of nanomaterials at preindustrial scale, using different dispersion systems.



## CHALLENGE

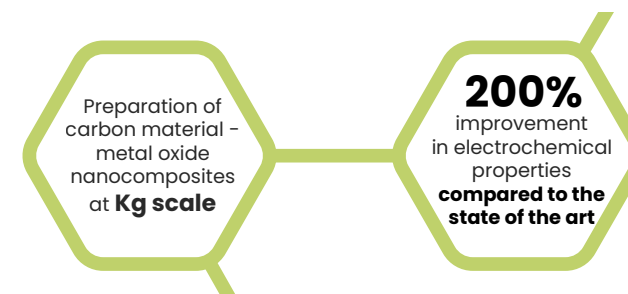
Reproducing pre-industrial scale processes to prepare a wide range of hybrid nanomaterials while maintaining their optimal performances.



## FURTHER DEVELOPMENT

Incorporation of new dispersion methods of carbon materials increasing working pressure operation of the pilot line. These updates will improve nanomaterials performance and reproducibility.

Design and manufacturing of new filtering process which will reduce the time per cycle and consequently the costs of manufacturing



## BENEFITS FOR COMPANIES AND SME'S

A proper channel to bring nanocomposites based on carbon materials from bio-resources and metal oxide nanoparticles to industry. Companies will have access to hundreds of grams-kilograms productions instead of milligrams, besides the offering of ad-hoc design of new products formulations with improved features and at competitive manufacturing costs..

## APPLICATION EXAMPLES

### ENERGY STORAGE:

Gnanomat will develop carbon-metal oxides nanocomposites to be used as active material in electrodes of supercapacitors (Test Case 7).