

## Allegato A PROGETTO Scienza senza Frontiere – Brasile

### Name of the doctoral program

Mechanics

Cotutelle X

### Title of the research activity

Lightweight design of automotive body with use of non conventional materials.

### Short description of the research activity

Lightweight design of vehicle body is one of the main target in order to reduce both fuel consumption and emissions of noxious gases. This target can be pursued through the use of non conventional materials such as composite materials. With this aim composite material with different type of reinforcements and different type of matrix will be analysed, taking into account the requisite of material recycling at the end of vehicle life. The use of non metallic materials ask also for the use of non conventional joining techniques such as adhesive joints. The use of this technology will also studied in detail as fundamental part of the research project.

### Scientific responsible (name, surname, role)

Prof. Giovanni Belingardi – research coordinator

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Prof. Luca Goglio

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### Number of vacancies for XXVIII cycle (begin January 2013)

Two PhD students could be included into the research team that is active for on-going projects on the specific subject – 1 full Degree – 1 cotutelle

### Specific requirements (experiences, skills)

Although non strictly mandatory, previous knowledge on vehicle body architecture, on finite element analysis, on mechanical characterization of materials are of interest in order to give a base for the PhD course.

### Website of the research group (if any)

[http://www.dimec.polito.it/en/la\\_ricerca/gruppi](http://www.dimec.polito.it/en/la_ricerca/gruppi)

- Vehicle structure and safety: design, simulation, optimization and tests
- Mechanics of Materials and Joints