PROJECT DESCRIPTION

A research-intensive company located in Barcelona area (Spain) and leader in its field is searching for a Senior Researcher to work in its R&D department. We are searching for an experienced researcher who can advance research concepts and transfer those concepts into an industrial scale.

The candidate will lead the research project that will focus on formulating, developing, and optimizing high performance composite resins that may be cured under appropriate radiation and thermal energy. Thus, the main objective will be to obtain composites resins with improved mechanical and thermal properties to be used in additive manufacturing as well as in other conventional manufacturing techniques (such as plastic injection molding). These composites are intended to be used in the automotive and aerospace sectors. Therefore, the research project has a strong level of innovation.

The research will cover many areas including the following:
- Selecting the raw materials
- Formulating of resins and development of composites
- Physicochemical and thermo-mechanical characterization
- Testing and development at laboratory scale
- Optimization and cost-reduction
- Scale-up to industrial level and demonstration

Due to the multidisciplinary approach of the project, a synergy with other fields of research is expected, and a candidate with strong skills in team work and proactivity is sought.

A sound part of the research will include understanding and describing the curing mechanisms of the resins developed as well as the interaction between radiation and the composite system. Therefore, the candidate’s experience will be a key factor for defining the type of curing mechanism (free-radical, cationic, and/or anionic) that is more suitable for system developed, which is aimed to be scaled-up at an industrial level. This includes developing new cationic photoinitiating systems and photoinitiators, as well as thermal initiators and activators.

The candidate should have sound knowledge of organic chemistry, especially in the field of photocurable and thermally curable resins. An expertise in others fields of materials science such as metals and composites is also desirable.

The candidate must have a completed PhD and a minimum of 4 years of research experience plus a minimum of 1 year of experience in applied research and/or activities for technological transfer as well as a minimum of 1 year in equipment management.