Development of new UV laser for customization at industrial level through high quality marking on different materials (UV-Marking)

Project newsletter II

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Coordinator:	BSH ELECTRODOMÉSTICOS ESPAÑA S.A. Mr. Andrés Escartín Andres.Escartin@bshg.com Tel. +34 976 10 27 16
Partners:	ROFIN SINAR LASER GMBH (Germany) WIRTHWEIN AG (Germany) MERCK KGAA (Germany) ILVA GLASS SPA (Italy) TORRECID SA (Spain) UNIVERSIDAD DE ZARAGOZA (Spain) U-MARQ LIMITED (United Kingdom)
Website:	www.uv-marking.eu
Duration:	01/07/2012 – 30/06/2015
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Contract number:	314630

The UV-Marking project

The UV-Marking project was launched in July the 1st 2012 with the main objective of developing a new laser system in the ultraviolet wavelength used for high quality aesthetical marking in different materials (glass-ceramic, ceramic and plastics). It will demonstrate that unitary customization will be possible at the end of UV-Marking project. A new SW application will be developed so that real customers can create their own designs at home, and send them to the factory to be marked in real products. Industrialization is a must, and therefore the laser system will be integrated into an industrial process to demonstrate its feasibility in a real scenario.

With the support of key worldwide companies and academic partners, UV-Marking project has a large reach network and strong exposure to relevant players and markets. The UV-Marking consortium is formed principally by industrial partners. It covers the whole value chain of UV-laser marking with high level experienced entities. The consortium gather the principal industrial actors involved in marking: final user (BSH), laser developer (ROFIN), material and additives developers (ILVA, TORRECID, WIRTHWEIN, MERCK), research centres expert on both material and laser giving scientific knowledge of the laser-marking process (University of Zaragoza, ICMA), and a software developer expert on industrial integration software (U-Marq).

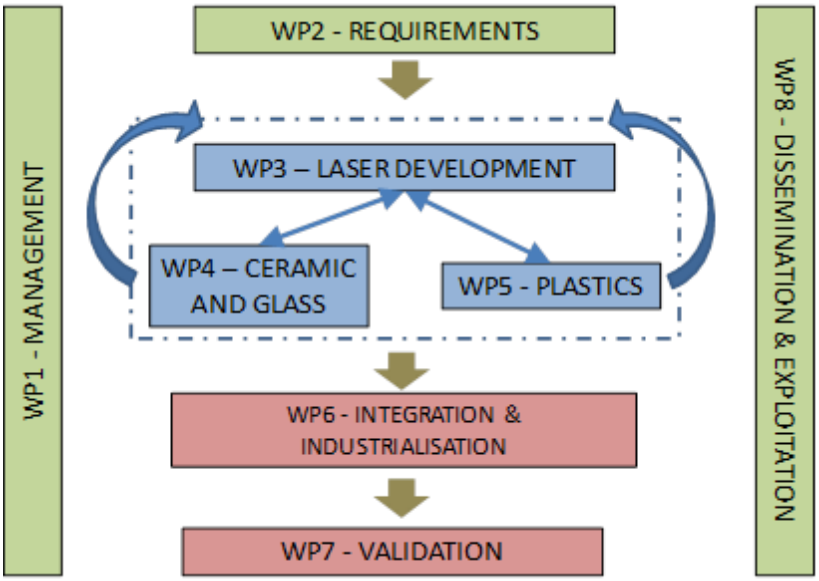
In summary, the role of each partner is shown below.

Figure 1: CONSORTIUM

The success of UV-Marking project will provide UV-laser advantages for aesthetic marking into production of European key industries, by improving both materials and UV laser systems. The project results will introduce high flexibility as it will be possible to mark at the end of a process. This will reduce stock levels (of similar pieces only with aesthetic differences), increase marking options for customization, reduce time to market of new and modified products, improve quality, delivery time, etc.

Project content

For the accomplishment of the objective of the project, the project has been organized into 8 different working packages as shown next:



- WP1 – Management
- WP2 – Requirements definition
- WP3 – Laser development:
- WP4 – Ceramic-Glass research
- WP5 – Plastic research
- WP6 – Integration and Industrialization
- WP7 – Validation
- WP8 – Dissemination and exploitation

Project status

All the project objectives for this first reporting period have been successfully achieved. The UV-Marking project is progressing with achieving 17 deliverables and 1 milestone to the planned delivery schedule.

The main efforts of the management activities were focused on the organisation of the kick-off meeting in October 1-2nd at BSH-Spain, as well on the preparation of the Quality Assurance Plan. The Communication and Dissemination task has been active since the beginning of the project to promote its activities within the consortium and to external stakeholders. A website for the promotion of UV-Marking and exchange of information within the consortium is available at http://uv-marking.eu

During the first 9 months of UV-Marking project, the consortium has progressed with the definition of the technical and physical requirements on the component part to be marked, from the factories in BSH to the scientific knowledge needed for the project. In fact WP2 deliverables and the Milestone 1 "Theoretical Basis – Establishment of requirements" have been finished.

The study of the development of the UV-laser for industrial production (WP3) became fully operational shortly after the start of the project. Main step has been the initial definition of the boundary conditions for the laser marking on plastics, ceramics and glass-ceramics, including the study of DoE inputs and outputs, data comparison and existing apps results.

UV-Marking on ceramic and glass-ceramic (WP4) as well as plastics materials (WP5) is also operational. The starting point has been the characterization and the research about the material structure and properties and the different approaches for optimization. In this stage the current state of the art has been analysed and studied. It will be the basis framework for the future development.

Results achieved during the first 9 months of the project allow being optimistic to face next challenges to finally achieve UV-Marking objectives.

For more information and contact please visit project web site: www.uv-marking.eu