

## I SPE - PLASTICS e-VOLUTION CONFERENCE

### From Bulk Molding to Laser Fabrication

Date: **04 Oct**

Time: **09:30 – 19:00h**

Where: **CC3 Room 3.14**

### Programme

**9:30- 10:00 Registration**

**10:00 -10:30 Keynote Introduction by Dr. Raed Al-Zubi**, the President of the Society of Plastics Engineers

**10:30-12:00 Materials and Additives for Powder Bed Fusion Technologies**

Powder Bed Fusion Technologies begun as the already known Selective Laser Sintering of thermoplastics and by now, the interesting Multijet Fusion technology from the Giant HP has been integrated in this group of technologies. The patents for Selective Laser Sintering have expired and there is an Open SLS initiative where the information for developing Selective Laser Sintering machines are available for all interested. Clearly there is a potential market for those powdered materials even though the technical challenges for their processing remain unsolved to some extent. In this block, several manufacturers of equipment and powdered materials will share their current developments and challenges.

**Speakers:** Dra. Carmina Querol, Sra. Cristina Egea Molina, François Minec, Mr. Hector Estelier.

**12:00 -12:30 Break for Refreshment**

**12.30 – 14:00 Materials and Additives for Vat Polymerization, DLP and Material Jetting**

The magic world of photosensitive resins is only limited by the imagination of the fortunate chemist and materials developers working on Materials and Additives for Vat Polymerization, DLP and Material Jetting. Coming from pre-polymers of three families of thermoset materials they design chain reactions initiated by a light source to give place to new varieties of materials: Polypropylene-like, ABS-Like, Flexible materials, Wax-Like, Calcifiable, Biocompatible, even Voxel to Voxel controlled materials are giving rise to the so called Digital Materials. In this block, we will know some of the most important players of this market that will share their current developments. Also, the main drawback of this family of materials: Aging, will be analyzed and discussed, as well as the OPEN SLA Platform.

**Speakers:** Sra. Brigitte Jacobs, Dra. Karla Mora Barrios, Dr. Martin Baumers, BASF (Ponente por confirmar), Envisiontec (Ponente por confirmar).

Last update: 05/09/2017

**14.00- 15:00    Lunch and Networking**

**15.00- 16:30    Thermoplastics: Current Implementation at Industry and Applications**

The real market for 3D Printed parts is still a mystery for many industrials. In this block, important players of the 3D printing value chain will share their success experience about the use of commodities and performance materials as well as the current cases of Applications already implemented at Industry. They will also present the challenges that remain unsolved from the technical point of view, giving rise to ideas and technical discussions. Finally, the target markets that will drive the growth of 3D Printed thermoplastics will be discussed.

**Speakers:** Dr. Alessandro Charalambis, Sra. Berta Gonzalvo, Sr. José Ramón Blasco, Dr. Joaquin Minguella.

**16.30- 17:00    Afternoon Refreshments**

**17.00- 18:30    Photosensitive Resins: Current Implementation at Industry and Applications**

Stereolithography was the first 3D printing method ever developed at 1986. Until now it remains as the Champion of the methods in one aspect: Resolution. It ranges from 20 microns at the more affordable technologies and it is approaching the nanometric scale at more recent fem-to-second laser induced two photon polymerization technologies. This competitive advantage has been the driver of its growth until now and justifies the 50% market share of photosensitive resins among all 3D printing materials during the last years. In this block, important players of the 3D printing value chain will share their success experience about the current cases of applications already implemented at Industry.

**Speakers:** Sra. Marine Core Baillais, Sr. Jonas Van Eyck, Sr. Hermann Hanning, Dr. Andreas Frölich.

**18.30-19:00    Summary of the day**

**19.00            Networking - Drink Reception for All attendees**

**Organiser:**



## I SPE - PLASTICS e-VOLUTION CONFERENCE

### From Extrusion to Fused Filament Fabrication

Date: **05 Oct**

Time: **09:30 – 18:00h**

Where: **CC3 Room 3.14**

#### Programme

**09.30 -10.00 Keynote Speech**

**10.00- 11.30 The Wide Market of Filaments**

Fused Filament Fabrication is the most promising technology to drive massive implementation of 3D printing. Since the advent of the RepRap Project at 2011 the number of installed 3D Printers has been increasingly growing as their price decreases and the 3D printing awareness goes massive. Since this technology can be described as a kind of micro extrusion, virtually any thermoplastic-based resin can be processed. In this block, the main players of the market present their families of products, ranging from commodities to high performance thermoplastics like Polyether– Ether-Ketone (PEEK).

**Speakers:** Sr. Hector Mas, Sr. Ramón Malet, Sr. Pablo Valero Martínez, Sr. Domingo Ramón Font Vidal.

**11.30-12.00 Break for Refreshment & Networking**

**12.00-13.30 Additives and Compounding for Fused Filament Fabrication**

3D Printing (FFF) as a new processing technology shows its own quality and reliability requirements. One of them is the anisotropy exhibited by the 3D printed parts and other intrinsic behavior to monitor of this technology is the interlayer adhesion. In this block the main additives providers, extruder manufacturers, custom materials manufacturers and final users will share their experience with the use of this new family of materials that can also be known as digital materials.

**Speakers:** Sr. José Ramón Fernández, Sr. Serafin Garcia Navarro, Sr. José Manuel Ben, Dra. Mercè de la Fuente.

**13.30-14.30 Lunch and Networking**

#### **14.30-16.00 Fused Filament Fabrication: Reliability, Bulk Testing and Simulation**

Much has been said about 3D Printing and Additive Manufacturing Standardization. A specific ASTM committee (F42) has been working about this subject and still the fruits are to come. Reliability, standardization of testing methods and computer simulation should go hand by hand in development to ensure an increasing reliability of 3D Printing as an industrial manufacturing method. In this block, some important research works will be presented as well as an overview of the most common methods currently used for simulation and quality assurance at Fused Filament Fabrication

**Speakers:** Dr. Guillermo Reyes, Dr. Antonio Travieso, Sr. Ignacio Eguía Cambero, Dr. Juan Rodriguez Hernández.

#### **16.00-16.30 Afternoon Refreshments**

#### **16.30-18.00 Composites for FFF: Advanced Manufacturing Applications**

Graphene, Carbon fiber, Kevlar, Glass beads, Glass fiber are some of the used reinforcement materials for current composites applied at advanced manufacturing: Aerospace, Automotive, Sports and Leisure applications. Those materials are also being introduced to Fused Filament Fabrication. In this block some current material manufacturers, machine manufacturers and final users will share their vision of the current development and challenges of this important segment of materials.

Speakers: Sra. Bianca Bauer, Sr. Victor Casal, Sr. Ignacio Garrido, Sra. Djamila Olivier Gonzalez.

#### **18.00 Summary of the day**

#### **Organiser:**

