4M2013
8 - 10 October
San Sebastián, Spain

DAY 1 (San Sebastián)
Tuesday 8th Oct 2013

Time 08:00h - 09:00h

Registration, Barceló Costa Vasca Hotel, San Sebastián

Time 09:00h to 09:45h

Opening & Welcome Speeches

- 4M2013 Chairman, Dr. Sabino Azcárate, IK4-Tekniker, Spain
- Basque Country Science & Technology Minster
- "Horizon 2020 & 4M2020", Dr. Erastos Filos, DG Research & Innovation, EC

Time 09:45h to 11:00h

Invited Talks

Chair: Dr. Sabino Azcárate, IK4-Tekniker, Spain

- "Innovative manufacturing processes for plastics parts with micro features", Professor Christian Hopmann, Institut für Kunststoffverarbeitung, Germany
- "Metrology challenges for highly parallel micro-manufacture", Professor Richard Leach, National Physical Laboratory, UK

Time 11:00h to 11:15h

Coffee Break

Time 11:15h to 12:30h

Session 1 : µ Electro Discharge Machining I

Chair Professor Eleonora Ferraris, KU Leuven, Belgium

342.Enhanced surface integrity and dimensional accuracy in micro-EDM drilling using D-shaped electrodes

357. Characterization and modeling of electrical discharges in air for micro EDM machining

414. Micro-EDM numerical simulation and experimental validation

415. Energetic modeling of a micro-EDM machine

Session 2: µ Injection Moulding (COTECH)

Chair: Dr. Helmut Loibl, FOTEC, Austria

353. Analysis of demoulding in micro injection moulding of cyclic-olefin-copolymer microfluidic systems

375. The Usage of Thermal Imaging for Temperature Measurements During Microinjection Moulding

419. In-line coating of channels in polymer micro-fluidic devices

426. Advancements on the simulation of the micro injection molding process

Time 12:30h to 14:00h

Lunch

Time 14:00h to 15:30h

Session 3: Micro Manufacturing

Chair: Dr. Iban Quintana, IK4-Tekniker, Spain

333. Influence of the Cutting Edge Geometry on the Tool Stress Distribution in Monocrystalline Silicon Punches for Microblanking of Thin Metal Foils

337. New Technologies Applications Of Microelectronics Devices Processing By Laser Locally Structural Modifications

363. Adaptively Tuned Micromanipulator

423. Surface Roughness Prediction in AFM Probe-based Machining

Session 4: Process Chains (EUMINAfab)

Chair: Dr. Susan Anson, KIT, Germany

341. Validation of a New Process Chain for Producing Bulk Metallic Glass Replication Masters with Micro and Nano-scale Features

346. Prototyping parts with micro scale features using Additive Layer Manufacturing: Using microneedles as a case study

355 - Performance Evaluation of Laser Micro-Machining Installations

416. Tooling and microinjection moulding of bottom grooved micromixers

Time 15:30h to 16:00h

Coffee Break

Time 16:00h to 17:45

Session 5: Novel Material Processing

Chair: Dr. Luc Federzoni, CEA, France

336. Nano texturing of micro injection moulding tools with diamond like carbon

338. Precise Micro-Texturing onto DLC Coating via High-Density Oxygen Plasma Etching

340. Nano-Laminated Diamond-like Carbon Coating for Hydrogen Gas Permeability Control

332. Electrochemical behavior of porous nanocomposites based on carbon foam and intermetallic Cu-Sn nanoparticles

370. Manufacturing of Solid Oxide Fuel Cells by Aqueous Tape Casting

Session 6: Laser Micro Processing

Chair: Dr. Petko Petkov, Cardiff University, UK

366. Laser machining of a Zr-based bulk metallic glass with nano-second laser

404. Single Pulse Nanosecond Laser Processing of Zirconium-based Bulk Metallic Glass

413. New Laser based Patterning Processes for 3D Devices

420. Imaging of copper ejection in pico- and nanosecond Laser Induced Forward Transfer

349. Laser material removal: Surface integrity

Time 19:00h to 22:30h

Visit by bus to IRETZA SAGARDOTEGIA and the Conference Dinner.

http://www.iretza.com/

DAY 2 (IK4-Tekniker, Eibar)
Wednesday 9th Oct 2013

Time 8:00-9:00, Bus transfers from Barceló Costa Vasca Hotel, San Sebastián to IK4-Tekniker, Eibar.

Time 09:00h to 09:30h

Opening & Welcome Speeches

- Dr. Alejandro Bengoa, General Manager of IK4-Tekniker, Spain
- "ONR Global - Programs and Opportunities", Dr. Shawn Thorne, Office of Naval Research Global - London

Time 09:30h - 11:15h

Invited Talks

Chair: Professor Stefan Dimov, 4M2013 Co-Chair, University of Birmingham, UK

- "Fabrication of Nano/Micro devices of metallic glasses", Professor Yasunori Saotome, Tohoku University, Japan
- "Surface Texturing", Professor Jian Cao, Northwestern University, US
- "Laser Shock Micro-Forming as an Emerging Technique for Microsystems Shaping and Adjustment", Prof. Dr. Ing. José L. Ocaña, Centro Láser UPM, Spain

Time 11:15h – 11:30h

Coffee Break

Time 11:30h - 12:45h

Session 7: μ Electro Discharge Machining II

Chair: Dr. Samuel Bigot, Cardiff University, UK

356. Major parameters affecting the electric discharge machining of non-conductive SiC

411. Combined Pulse Characterization and Discrimination for Micro-EDM Milling Tool Wear Study

417. Highly irregular surface roughness replicated onto microfluidic part using micro injection molding for cell biological research purposes

344. Fabrication of High-aspect-ratio Cylindrical Sub-micrometre Tool Using ECM

Session 8: IMPRESS Manufacturing Platforms

Chair: Dr. Stéphane Dessors, PEP, France

424. IMPRESS System Expert Tool: a collaborative engineering software for specification of micro / nano features products and processes

367. Manufacturing of nanostructured plastic components combining nanosphere lithography and replication techniques

371. Impact of melt viscosity on replication quality of plastic parts with micro and nano sized features demonstrated on the IMPRESS platform

368. Structuring of mold insert by colloidal lithography for antireflective properties

Time 12:45h - 14:00h

Lunch and sponsors

Time 14:00h - 15:30h

Session 9: μ Machining

Chair: Dr. Massimiliano Annoni, Politecnico Di Milano, Italy

339. Offset diamond turning technique for machining of Fresnel lens arrays

354. Performance Evaluation of Micro Milling Installations

358. Cutting force prediction performance of a microcutting slip-line field model in brass machining

364. Reducing waviness in diamond turning by analysis of surface profile

418. Compensating the cutting edge displacement during micro milling – a mechatronic approach

Session 10: Process Design & Characterisation

Chair: Dr Guido Tosello, DTU, Denmark

335. Thermoplastic PMMA/PEG binder system for micro ceramic injection moulding

359. A novel approach to additive manufacturing, screw extrusion 3D-printing

365. Analysis of the process chain for the production of optical functional micro structures by injection moulding

412. Investigation of dimensional accuracy in powder injection molding

Time 15:30h - 15:45h	
Coffee Break	
Time 15:45h - 17:15h	
Session11: Manufacturing Platforms **Chair:** Professor Werner Brenner, TU-Wien, Austria **350. Rapid Prototyping of Polymeric Micro-Fluidic Systems Using a Roll-to-Roll Micro-Replication Process** **428. Application of the infrared thermography in the automated spot soldering process** **422. Development of a high-throughput roll-to-roll production platform for the micro-manufacturing and assembly of lighting devices** **345. Microsystems wire bonding technology navigation towards economic packaging solutions** **421. MEMS based phase change actuator for medical application**	**Session 12: Product & Process Design (SMART-FRAME)** **Chair:** Dr. Steffen Scholz, KIT, Germany **343. A Combination of Iron Oxide Nanoparticles and Inkjet Inks to Obtain New Functional Inks** **347. Development of Multiscale, Multicriteria Optimization of SiP Design Methods** **348. Empowering Business in Central Europe** **351. Efficient Scenarios, Methodology and Tools for MEMS/NEMS Product Development** **407. An additive manufacturing and e-printing based approach for flexible scalable manufacturing of Microsystems**
Time 17:15h – 18:00	
Tour of IK4-Tekniker	
Time 18:00h – 19:30	
Tapas Cocktail Reception	
Time 19:30 : Buses leave for San Sebastián	

DAY 3
Thursday 10th Oct 2013

Time 10:00h - 12:005h

Visit to CIC nanoGUNE Consolider, San Sebastián
Website: http://www.nanogune.eu/en/

Please book a place for the visit with Natalie Withenshaw (natalie.withenshaw@ctechinnovation.com) by 1st October 2013

Time 12:00h: End of the 4M2013 Conference