

Time 08:00h - 09:00h

Registration, Barceló Costa Vasca Hotel, San Sebastian

Time 09:00h to 09:45h

Opening & Welcome Speeches

- 4M2013 Chairman, Dr. S. Azcarate, IK4-Tekniker, Spain
- Basque Country Science & Technology Minister
- "Horizon 2020 & 4M2020", Dr. Erastos Filas, DG Research & Innovation, EC

Time 09:45h to 11:00h

Invited Talks

Chair: Dr. S. Azcarate, IK4-Tekniker, Spain

- TBC, 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 Dr Eleonora Ferraris,

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 microfluidic 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: 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

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

421. MEMS based phase change actuator for medical application

Time 19:00h to 22:30h

Visit by bus to IRETZA SAGARDOEGIA and the Conference Dinner.

<http://www.iretza.com/>

Time 8:00-9:00, Bus transfers from Barceló Costa Vasca Hotel, San Sebastian 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: Prof. 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. José L Ocaña, Centro Láser UPM

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. Mael MOGUEDET, 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, ???

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. ???

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: Dr.???,

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

Session 12: 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 17:15h – 18:00

Tour of IK4-Tekniker

Time 18:00h – 19:30

Tapas Cocktail Reception

Time 19:30 : Buses leave for San Sebastian

Time 10:00h - 12:005h



Visit to CIC nanoGUNE Consolider, San Sebastian

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 4M2020 Conference