

# ICCPs-11

2010, Zurich (Switzerland)

11<sup>th</sup> INTERNATIONAL CONFERENCE ON  
CERAMIC PROCESSING SCIENCE  
ZURICH, SWITZERLAND  
29<sup>th</sup> AUGUST - 1<sup>st</sup> SEPTEMBER, 2010



**DMATL**

Department of Materials

[www.iccps11.ethz.ch](http://www.iccps11.ethz.ch)

**ETH**

Eidgenössische Technische Hochschule Zürich  
Swiss Federal Institute of Technology Zurich

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# ICCPS-11

2010, Zurich (Switzerland)

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Visit our exhibition booths on the G-floor (HCI building).

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# ICCPs-11

2010, Zurich (Switzerland)

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We welcome an international community to the 11<sup>th</sup> International Conference on Ceramic Processing Science (ICCPs). This conference is held every two to three years and the meeting site rotates between the United States, Japan, and Europe.

The purpose of the conference is to bring together scientists, engineers, research staff, and students from universities, research institutes and related industrial companies in the field of ceramics. The conference covers a broad range of fundamental and applied topics.

Progress in materials science is highly depending on new and improved processing technologies in order to produce reliable products of controlled size, shape, microstructures and properties. This series of the International Conferences on Ceramic Processing Science is dedicated to report on these progresses.



Prof. Ludwig J. Gauckler  
(Chair)



Prof. Kunihiro Koumoto  
(Co-Chair)



Prof. Gary L. Messing  
(Co-Chair)

# PROGRAM

## SUNDAY, AUGUST 29<sup>TH</sup>, 2010

6:00 pm – 10:00 pm	Welcome reception & registration at Blumenhalle Heinrichstrasse 237, CH-8005 Zurich
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## MONDAY, AUGUST 30<sup>TH</sup>, 2010

9:00 am	Welcome and Plenary lecture ETH Hönggerberg, HCI building, room G3			
10:00 am	Coffee break on G- and J-floor			
<b>Session</b>	<b>I</b> room G3	<b>II</b> room G7	<b>III</b> room J3	<b>IV</b> room J4
10:30 am	Printing & Processing	Particle synthesis I	Micro- structure & Properties I	Composites I
12:30 pm	Lunch on F-floor			
2:00 pm	Porous ceramics I	Particle synthesis II	Micro- structure & Properties II	Composites II
4:00 pm	Coffee break on G- and J-floor			
4:30 pm	Porous ceramics II	Particle synthesis III	Micro- structure & Properties III	Characteri- zation I
6:00 pm	Poster session on G- and J-floor (with refreshments)			

# PROGRAM

## TUESDAY, AUGUST 31<sup>ST</sup>, 2010

8:30 am	Plenary lecture in room G3			
9:30 am	Coffee break on G- and J-floor			
<b>Session</b>	<b>I</b> room G3	<b>II</b> room G7	<b>III</b> room J3	<b>IV</b> room J4
10:00 am	Assembly & Patterning	Rheology & Dispersion	Processing of electro-ceramics	Thin films I
12:30 pm	Lunch on F-floor			
2:00 pm	Shaping I	Particle synthesis IV	Sintering I	Thin films II
4:00 pm	Poster session on G- and J-floor (with refreshments)			
6:00 pm	Shuttle bus to conference dinner			
7:00 pm – 11:00 pm	Conference dinner on the lake			

## WEDNESDAY, SEPTEMBER 1<sup>ST</sup>, 2010

8:15 am	Coffee break on G- and J-floor			
8:30 am	Conference announcement ICCPS-12 and Plenary lecture in room G3			
<b>Session</b>	<b>I</b> room G3	<b>II</b> room G7	<b>III</b> room J3	<b>IV</b> room J4
9:30 am	Shaping II	Modeling & Simulation	Sintering II	Characterization II
11:30 am	Lunch on F-floor			
11:30 am – 9:00 pm	Excursion to NEAT: Bus leaves at 11:30 am, lunch packages (for excursion participants only) will be distributed on the bus			



# REGISTRATION DESK & CONFERENCE OFFICE

Opening times of the registration desk and conference office:

Sunday, 29<sup>th</sup> August 2010

(Blumenhalle, Welcome reception & registration):

6 pm – 10 pm

Monday, 30<sup>th</sup> August 2010

(ETH Hönggerberg, HCI building, E-floor, in the entrance hall):

8 am – 5 pm

Tuesday, 31<sup>st</sup> August 2010

(ETH Hönggerberg, HCI building, E-floor, room E8):

8 am – 5 pm

Wednesday, 1<sup>st</sup> September 2010

(ETH Hönggerberg, HCI building, E-floor, room E8):

8 am – 11 am

## INTERNET LOGIN

How to access wireless-LAN in the lecture halls at ETH Zurich:

1. Check available WLANs
2. Connect to WLAN “public”
3. Open browser
4. Login with: iccps11-guest, password: ferminio.g@uss

## TICKET FOR ZURICH PUBLIC TRANSPORT

A ticket for public transport in Zurich (Zone 10) is included in the conference folder. This ticket is valid for the entire duration of the conference (starting upon registration at the Blumenhalle).

# SOCIAL EVENTS

## Welcome – Reception & Registration

The welcome reception and registration will take place at the Blumenhalle (Heinrichstrasse 237, 8005 Zurich) on Sunday, August 29<sup>th</sup>, 7 pm – 10 pm. There will be drinks and a light buffet.



## Conference – Dinner “on the lake”

The conference dinner will take place on a boat on Lake Zurich on Tuesday, August 31<sup>st</sup>, 6 pm – 11 pm. The boat leaves at 7 pm from Bürkliplatz. Shuttle buses will depart from ETH Hönggerberg bus stop at 6 pm and take all participants to Bürkliplatz for embarkation. The Scholl & Bondt jazz band will perform on the boat. Dinner is included in the conference fee but please note that we ask all participants to pay for their beverages themselves.



## Excursion – NEAT construction site

The conference excursion to the NEAT construction site will take the participants to Sedrun (Graubünden) on Wednesday, September 1<sup>st</sup>, 11:30 am – 9 pm. Lunch packages (for excursion participants only) will be distributed on the bus at 11:30 am.



# LUNCHES

Lunches will be served in the mensa of the HCI building (F-floor), ETH Hönggerberg.

# HOW TO GET TO ETH HÖNGGERBERG

## Arrival at Zurich Kloten airport <sup>(\*)</sup>

- After reclaiming baggage, follow the "**Bahn/Railway**" signs and take an escalator down to platforms 3 or 4. Trains to Zurich Oerlikon leave every 10 min, and the ride takes about 5 min. Exit at Zurich Oerlikon and take **bus 80** direction Triemlisplatz. Get off at ETH Hönggerberg bus stop. The bus ride takes about 10 min.
- After reclaiming baggage, follow the "**Tram 10**" signs. The tram stop is located behind the bus station. Tram 10 to Zurich Oerlikon leaves every 15 min, and the ride takes about 15 min. Get off at Zurich Oerlikon Ost and take **bus 80** direction Triemlisplatz. Get off at ETH Hönggerberg bus stop. The second ride takes 10 min.
- A taxi ride from the airport to ETH Hönggerberg takes ca. 20 min and costs ~35 CHF.

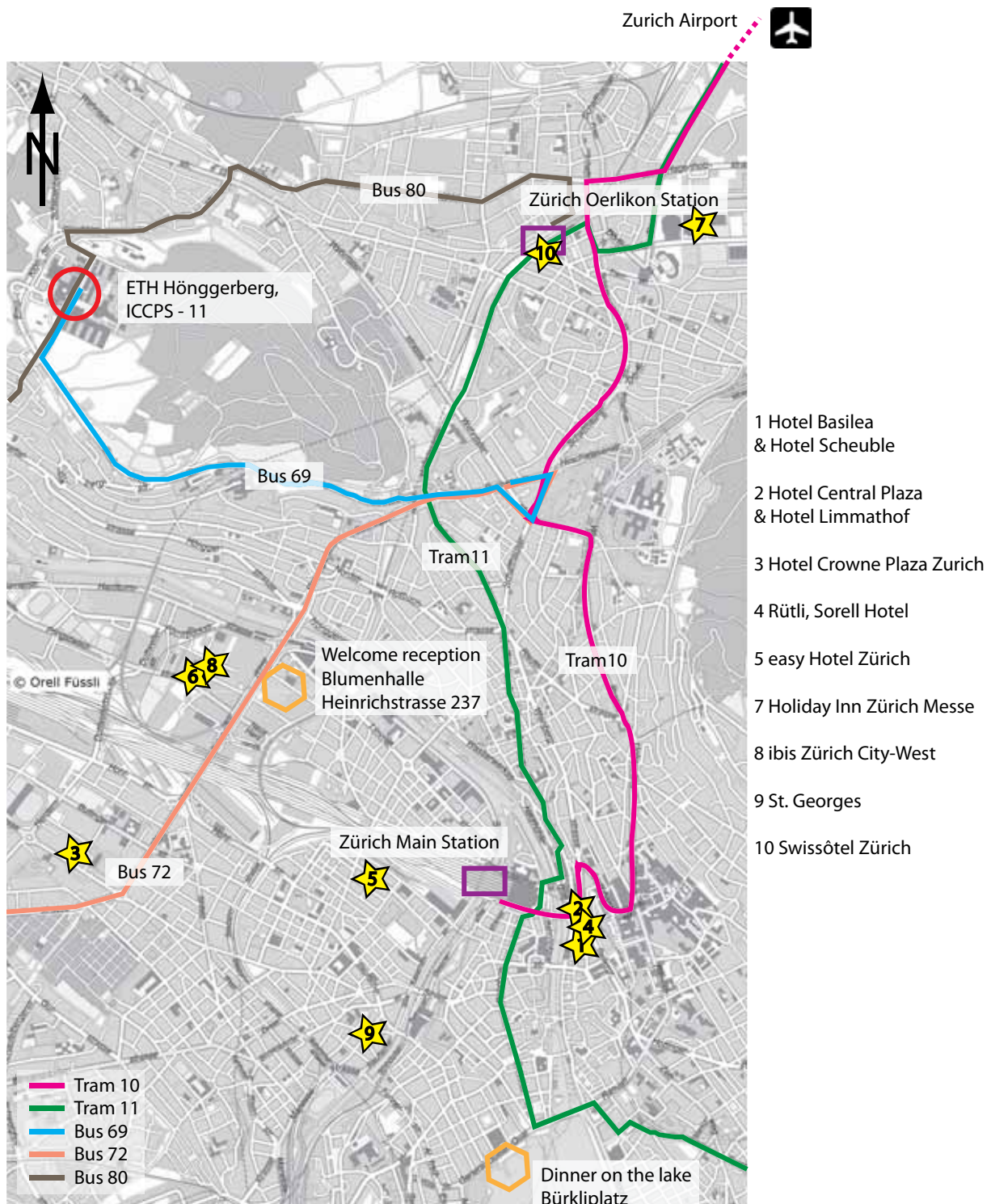
## Arrival at the main train station Zurich Hauptbahnhof <sup>(\*)</sup>

- At the main train station, walk to the front of the train, walk straight on through the station building, and take **tram 11** direction Auzelg, get off at Bucheggplatz, change onto **bus 69** to ETH Hönggerberg. The total journey takes approx. 25 min.
- At the main train station, walk to the front of the train, walk straight on through the station building, and take **tram 14** direction Seebach, get off at Milchbuck, change onto **bus 69** to ETH Hönggerberg. The total journey takes approx. 25 min.
- A taxi ride from Zurich main train station to ETH Hönggerberg takes ca. 15 min and costs ~35 CHF.

<sup>(\*)</sup> Tickets for public transport can be purchased at the ticket office or from automatic ticket machines.



# HOW TO GET TO ETH HÖNGGERBERG



Overview of public transport for getting to ETH Hönggerberg.



## ORAL PRESENTATIONS

Computers and projectors will be available in all lecture rooms, as well as a VGA plug for laptops. It is furthermore advisable to have the files on a USB memory stick. No overhead projectors will be available in the lecture rooms!

Presenting authors are asked to come to the respective lecture room before the session, to ensure that there is enough time for installing the laptop. All rooms are open 1 hour before the start of the session. Please check with the room attendant whether everything is working properly.

## POSTER PRESENTATIONS

The poster areas are located on the G- and J-floors. The maximum size for a poster is format A0 portrait (width 841 mm x height 1189 mm). All poster presenters are kindly asked to mount their poster on Monday morning during the coffee break at 10 am and to remove it at the end of the poster session on Tuesday. The organizers assume no responsibility for posters left up after this time. Posters should be mounted on the board with the corresponding number. Posters with odd numbers (e.g. A01, A03, B01, ...) will be presented on Monday from 6 pm. Posters with even numbers (e.g. A02, A04, B02, ...) will be presented on Tuesday from 4 pm. At least one presenting author should be present at their poster for discussion with attendees during the session.

## POSTER AWARD CEREMONY

The Poster Award Ceremony will take place on the boat during the Dinner on the Lake on Tuesday, 31<sup>st</sup> August, 2010.

Winners that are not present at the dinner will be informed of their award by email.

# ORAL PRESENTATIONS

MONDAY, AUGUST 30<sup>TH</sup>, 2010

## Plenary lecture

9:00 am John Halloran

room G3

Photopolymerization of ceramic suspensions for shaping

## Session I

room G3

### Printing & Processing

*Chairs: Jennifer Lewis & Fabrice Rossignol*

10:30 am Brian Derby (*invited*)

Inkjet printing: from drops to solid

11:00 am Andreas Roosen

Printed transistors based on nanosized oxide powders

11:15 am David Salamon

Porous ceramic membrane reactor prepared by rapid prototyping

11:30 am Wolfgang Schafbauer

Co-tape casting of ceramics for low cost SOFC manufacturing

11:45 am Stephen Poterala

Processing of <001> radially textured PMN-PT cylinders and spheres

12:00 pm Marcus Müller

Processing and properties of micro-components made of ZrO<sub>2</sub> and Si<sub>3</sub>N<sub>4</sub>

12:15 pm Israfil Küçük

Influence of thermal shock test on thermal and mechanical behaviors of aluminium titanate / forsterite ceramics by P/M method

### Porous ceramics I

*Chair: Urs T. Gonzenbach*

2:00 pm Paolo Colombo (*invited*)

Fabrication of porous ceramics from preceramic polymers

2:30 pm Tanja Y. Klein

Fabrication of functionalised porous alumina based ceramics for water cleaning and bioengineering applications

2:45 pm Mateus Vieira Carlesso

Production of bimodal pore size alumina foams by combining direct foaming and sacrificial templating

3:00 pm	Linnea Andersson	Tuning the permeability to fluid flow in macroporous Al <sub>2</sub> O <sub>3</sub> : A 3D study with X-ray micro-computed tomography
3:15 pm	Farid Akhtar	Colloidal processing and thermal treatment of binderless hierarchically porous zeolite 13X monoliths for CO <sub>2</sub> capture
3:30 pm	Philip N. Sturzenegger	The formation of particle-stabilized microcapsules from various materials
3:45 pm	Yoram de Hazan	Functional ceramic and nanocomposite fibers, cellular articles and microspheres via radiation curable colloidal dispersions

## Porous ceramics II

*Chair: Paolo Colombo*

4:30 pm	George Franks ( <i>invited</i> )	Complex shape forming: gelcasting with PVA for dense and porous components and tapes
5:00 pm	Jonathan Sander	Double emulsion templated functional capsules
5:15 pm	Mariangela Lombardi	Processing of a natural hydroxyapatite powder: from powder optimization to porous bodies development
5:30 pm	Frank Clemens	Processing of short fiber reinforced porous CMCs and MMCs tubes via thermoplastic powder extrusion route
5:45 pm	Noemie van Garderen	Investigation on microstructure and attrition resistance of open porous diatomite based granulates manufactured by extrusion method

## MONDAY, AUGUST 30<sup>TH</sup>, 2010

Session II

room G7

### Particle synthesis I

*Chair: Cristina Giordano*

- 10:30 am Markus Niederberger  
(*invited*) Nonaqueous liquid-phase routes to inorganic particles and films
- 11:00 am Yuya Oaki Aqueous solution syntheses of amorphous nano-opal structures comprised of metal oxide nanocrystals
- 11:15 am Naonori Sakamoto Fabrication of VO<sub>2</sub> nano particle from solution and its designed transition temperature by doped tungsten
- 11:30 am Bertrand Faure Surface modification, dispersion and competitive adsorption on iron oxide nanoparticles
- 11:45 am Niki Prastomo BaZrO<sub>3</sub> photocatalyst prepared by sol-gel process and base-hot-water treatment
- 12:00 pm Ayhan Mergen Sol-gel combustion synthesis and characterization of ZnNb<sub>2</sub>O<sub>6</sub> powders and ceramics
- 12:15 pm Ming Sun Pursuing low-density ZnO powder via rapid combustion of the metallo-organic gel of zinc ion

### Particle synthesis II

*Chairs: Jürgen Heinrich & Markus Niederberger*

- 2:00 pm Kazumi Kato Hierarchical structure of BaTiO<sub>3</sub> nanocrystals based on sonochemistry
- 2:15 pm Idalia Bilecka Microwave-assisted routes to inorganic particles in organic solvents
- 2:30 pm Cristina Giordano Metal nitride and carbide synthesis: simple approaches for challenging materials
- 2:45 pm Shinobu Fujihara Synthesis of inorganic-organic hybrid materials based on liquid–liquid biphasic systems
- 3:00 pm Tani Takao Optically functionalized periodic mesoporous organosilica



3:15 pm	Anil Gambhire	Synthesis and characterization of FeTiO <sub>3</sub> ceramics
3:30 pm	Yuji Masubuchi	Magnetite prepared in benzyl alcohol for the preparation of Fe <sub>16</sub> N <sub>2</sub> with large magnetization
3:45 pm	Chiravoot Pechyen	Synthesis and characterization of ZSM-5 from coffee ( <i>Coffea Arabica</i> L.) bean waste

### Particle synthesis III

*Chairs: Philippe Miele & Markus Niederberger*

4:30 pm	Jürgen Heinrich ( <i>invited</i> )	Powder processing science and technology with lasers as energy sources
5:00 pm	Frank Müller	Preparation of ceramic nanospheres by CO <sub>2</sub> laser vaporization (LAVA)
5:15 pm	Moazzam Ali	Chemical vapor functionalization of ZnO nanocrystals
5:30 pm	Sirine Chehaidi	Silicon carbide-silicon nitride composites from SiCN <sub>2</sub> O and SiCNAl(O) pre-alloyed nanopowders
5:45 pm	Ik Jin Kim	Self-assembled monolayer of zeolite supported iron/cobalt oxide nano-particles for well-aligned carbon nanotubes(CNTs) growth by catalytic CVD

## MONDAY, AUGUST 30<sup>TH</sup>, 2010

Session III

room J3

### Microstructure & Properties I *Chair: William Lee*

- 10:30 am Gary L. Messing (*invited*) Sintering and microstructure in exceptionally dense, fine grained transparent Nd:YAG ceramics
- 11:00 am Suk-Joong L. Kang (*invited*) Solid state growth of piezoelectric single crystals and their properties
- 11:30 am Yusuke Kawamoto Processing of textured BNKT piezoelectric ceramics by reactive-templated grain growth process
- 11:45 am Shiwei Wang Processing control for making high optical quality Nd:YAG ceramics
- 12:00 pm Farhad Golestani-fard Microstructure evolution of a commercial ultrafine alumina powder densified by different methods
- 12:15 pm Adam Stevenson Kinetics and optical properties of Nd:YAG single crystals grown by the single crystal conversion method

### Microstructure & Properties II *Chairs: Gary L. Messing & Suk-Joong L. Kang*

- 2:00 pm William Lee (*invited*) Importance of solid-liquid interactions in microstructural evolution of ceramics
- 2:30 pm Xin Wang Constrained sintering and anisotropic microstructure of ceramic films
- 2:45 pm Sebastjan Perko High performance porous nanostructured ceramics
- 3:00 pm Ryoichi Furushima Change in orientation distribution of a crystal-oriented alumina prepared by magnetic field in a sintering process
- 3:15 pm Tohru Suzuki Highly controlled orientation of  $\text{CaBi}_4\text{Ti}_4\text{O}_{15}$  using both template grain and strong magnetic field

3:30 pm	Kahraman Keskinbora	Anisotropic sintering behavior in textured ZnO
3:45 pm	Igor Shabalin	Reactive hot-pressing and modification of $\beta'$ -sialon – $\alpha$ -boron nitride hetero-modulus ceramics

### Microstructure & Properties III *Chair: Jakob Kübler*

4:30 pm	Duygu Agaogullari	The effect of $\text{La}_2\text{O}_3$ modification on the microstructural and mechanical properties of YSZ ceramics prepared by powder metallurgy
4:45 pm	Jasbir Singh Aujla	A comparison of SEVNB and ISB for the calculation of fracture toughness in engineering ceramics
5:00 pm	Mehdi Mazaheri	Processing and properties of nanostructured 8YSZ
5:15 pm	Eung Soo Kim	Effects of two-step heat treatment on the thermal properties of $\text{CaO-MgO-Al}_2\text{O}_3\text{-Si}_2\text{O}$ glass-ceramics
5:30 pm	Maris Kodols	The synthesis and characterization of nickel and cobalt ferrite nanopowders
5:45 pm	Yogendra Prasad Yadava	Production of $\text{Ba}_2\text{AlZrO}_{5.5}$ ceramics and study of their stability in crude petroleum for the conservation of metallic parts used in petroleum extraction

## MONDAY, AUGUST 30<sup>TH</sup>, 2010

### Session IV

room J4

#### Composites I

*Chairs: A. J. Sanchez-Herencia & Yanchun Zhou*

- 10:30 am Richard Todd (*invited*) Processing and properties of glass-ceramic/carbon nanotube composites
- 11:00 am Jon Binner Processing of ultra high temperature ceramic–carbon fibre composites
- 11:15 am Mehdi Mazaheri Processing of yttria stabilized zirconia reinforced with carbon nanotubes with attractive mechanical properties
- 11:30 am Gurdial Blugan Processing and properties of alumina/carbon nanofiber ceramic composites
- 11:45 am Rolf Janssen Reaction based synthesis of oxide matrix composites
- 12:00 pm Rémy Boulesteix Corrosion resistance in cryolite salt melts of SiC-based composites obtained from polymeric precursors

#### Composites II

*Chair: Richard Todd*

- 2:00 pm Yanchun Zhou (*invited*) Multi-scale structural characterization and design of damage tolerant ceramics
- 2:30 pm Jon Binner Metal-ceramic Interfaces in interpenetrating composites for light armour applications
- 2:45 pm Oleg Vasylykiv Superhard B<sub>4</sub>C/BN and TiAlN reinforced with aluminum nitride nanocrystals via SPS synthesis/consolidation
- 3:00 pm Elisa Paola Ambrosio Cost effective intelligent hybrid solution for automotive brake systems
- 3:15 pm Antonio J. Sanchez-Herencia Processing of iron containing ceramic composites by dispersion of metallic powders in water

- |         |                    |  |
|---------|--------------------|--|
| 3:30 pm | Cleocir Dalmaschio | Alumina-zirconia composite obtained by metastable solid-solution |
| 3:45 pm | Csaba Balazsi      | Engineered multifunctional silicon nitride nanocomposites        |

## Characterization I

*Chair: Joakim Reuteler*

- |         |                                 |  |
|---------|---------------------------------|--|
| 4:30 pm | Won-Sub Yoon ( <i>invited</i> ) | Application of synchrotron-based X-ray techniques to study thermal behavior of electrode materials for lithium rechargeable batteries                                  |
| 5:00 pm | Sylvain Deville                 | In situ investigations of the ice-templating process using X-rays radiography and tomography   |
| 5:15 pm | Almuth Berthold                 | In-situ neutron diffraction study of metal oxide supported VO <sub>x</sub> catalysts   |
| 5:30 pm | Pramoda Nayak                   | Electron-energy loss spectroscopy and Raman studies of nanosized chromium carbide synthesized during carbothermal reduction process from precursor Cr(CO) <sub>6</sub> |
| 5:45 pm | Mario Arar                      | Determination and analysis of diffusion of metals in PZT   |

## TUESDAY, AUGUST 31<sup>ST</sup>, 2010

### Plenary lecture

room G3

8:30 am Kazuyuki Kuroda

Mesoporous materials with highly controlled compositions, structures, and morphologies

### Session I

room G3

#### Assembly & Patterning

*Chair: André Studart*

10:00 am Jennifer Lewis (*invited*)

Microscale patterning of ceramic and metallic architectures

10:30 am Lennart Bergström (*inv.*)

Shape-selective assembly of nanoparticles

11:00 am Ilhan A. Aksay (*invited*)

Functionalized graphene in the development of adaptive materials

11:30 am Satoshi Tanaka

Influence of particle-particle interaction on the time-dependent orientation of particles in high magnetic fields

11:45 am Begoña Ferrari

Electro-driven assembly of nanoparticles to produce dense thin films

12:00 am Alexander Nold

Electrophoretic micro depositing

12:15 pm Randall Erb

Bioinspired 3D reinforced composites

#### Shaping I

*Chairs: Cécile Pagnoux & Rodrigo Moreno*

2:00 pm Shiwei Wang (*invited*)

Gelcasting of ceramics based on epoxy resin and polyamine

2:30 pm Jinlong Yang (*invited*)

Recent developments in gelcasting of ceramics

3:00 pm Philippe Miele (*invited*)

Synthesis and processing of boron-based polymer-derived nanostructured ceramics

3:30 pm José Ferreira

Hydrolysis induced aqueous gelcasting of advanced ceramics



3:45 pm	Hideto Yamada	Development of LiCoO <sub>2</sub> crystal orientation using slip casting in a strong magnetic field
4:00 pm	Anne Mannschatz	Influence of powder morphology on properties of ceramic injection moulding feedstocks
4:15 pm	Roland Bayer	Steering the ceramic's extrusion process with the help of the pseudoplastic properties of cellulose ether binder

## TUESDAY, AUGUST 31<sup>ST</sup>, 2010

Session II

room G7

### Rheology & Dispersion

*Chairs: Andreas Roosen & Brian Derby*

- |          |                                |   |
|----------|--------------------------------|---|
| 10:00 am | Wilson Poon ( <i>invited</i> ) | Imaging the flow of concentrated suspensions  |
| 10:30 am | Stuart Blackburn               | Rheological design of ceramic pastes for the co-extrusion of solid oxide fuel cells                     |
| 10:45 am | Werner Bauer                   | Rheological properties of electrode pastes for lithium iron phosphate batteries                         |
| 11:00 am | Yuki Takahashi                 | Particle motion in plastic high concentrate ceramic paste under lower stress field.                     |
| 11:15 am | Vladislava Tomeckova           | Rheology of ceramic suspensions in polymerizable acrylate monomers                                      |
| 11:30 am | Nicolas Bouvier                | Formulation of dielectric inks for the fabrication of high power ceramic capacitors by ink-jet printing |
| 11:45 am | Annegret Potthoff              | Nanofluids - ready to use?  |
| 12:00 pm | Ales Dakskobler                | Particle packing in weakly flocculated suspensions: a play of shear conditions                          |
| 12:15 pm | Judith Pommay                  | Aqueous dispersion of tungsten powder for inkjet printing process                                       |
| 12:30 pm | Pawel Falkowski                | Application of fructose and their derivatives as dispersing agents for nanosized alumina suspensions    |

### Particle synthesis IV

*Chair: Yuya Oaki*

- |         |                     |   |
|---------|---------------------|---|
| 2:00 pm | Gennady Shter       | Zinc oxide nanofibers by electrospinning  |
| 2:15 pm | Eiji Hosono         | Fabrication of nanowire materials for battery   |
| 2:30 pm | Marina Rojas-Ismael | Process chain development for the microfabrication of solid and hollow ferroelectric fibers by co-extrusion |

2:45 pm	Wichaid Ponhan	Fabrication and magnetic behavior of Fe-doped $\text{La}_{0.5}\text{Sr}_{0.5}\text{TiO}_3$ nanofibers
3:00 pm	Murat Erdem	Crystallization behaviour of neodymium doped yttrium silicate nanophosphors
3:15 pm	Duygu Agaogullari	Synthesis of magnesium borates by mechanically activated annealing
3:30 pm	Sotiris Pratsinis ( <i>invited</i> )	Gas phase synthesis of ceramic powders and their properties

## TUESDAY, AUGUST 31<sup>ST</sup>, 2010

### Session III

room J3

#### Processing of electroceramics *Chair: Jennifer Rupp*

- 10:00 am Fabrice Rossignol (*inv.*) Steam reforming processes for syngas production challenges in terms of materials and processes
- 10:30 am Soichiro Sameshima Processing and performance of solid oxide fuel cell with Gd-doped ceria as electrolyte
- 10:45 am Qianli Chen Correlation of structure and proton conductivity in BaZrY-oxide
- 11:00 am Min-Fang Han Manufacture process of doped CeO<sub>2</sub>- $\delta$ , electrolyte with fine grains
- 11:15 am Xiaochao Song Sintering behavior and mechanisms of 8mol% YSZ doped by a small amount of NiO
- 11:30 am Zhen Yang Phase equilibria relations, electrical conductivity, and defect chemistry aspects of perovskite-structured cathodes for solid oxide fuel cells
- 11:45 am Zhijian Peng Effect of ZrO<sub>2</sub> doping on microstructural and electrical properties of ZnO-Pr<sub>6</sub>O<sub>11</sub>-based varistor ceramics
- 12:00 pm Ahmed Aoujgal Relaxor behaviour in (Ba<sub>1-3x/2</sub>Bix)(Zr<sub>0.1</sub>Ti<sub>0.9</sub>)O<sub>3</sub> ceramics
- 12:15 pm Feng Han High-performance anode-supported solid oxide fuel cells with 1  $\mu$ m thick 8YSZ electrolyte

#### Sintering I

*Chair: Guillaume Bernard-Granger*

- 2:00 pm Kazuyuki Kakegawa (*inv.*) Change in compositional distribution during densification by SPS
- 2:30 pm Amiya K. Mukherjee (*invited*) Sintering, shaping, and mechanical properties of ceramic nanocomposites produced by electrical field assisted sintering method

3:00 pm	Olivier Guillon	Spark plasma sintering: what does it really bring? Zinc oxide as example
3:15 pm	Csaba Balazsi	Microstructural and mechanical characterization of spark plasma sintered hydroxyapatite-zirconia composites
3:30 pm	Chunlei Wan	Thermoelectric natural superlattice material (SnS) <sub>1.2</sub> (TiS <sub>2</sub> ) <sub>2</sub> consolidated by spark plasma sintering
3:45 pm	Dreidy Vasquez-Sandoval	Molybdenum and niobium silicide composites fabricated by spark plasma sintering and tape casting

## TUESDAY, AUGUST 31<sup>ST</sup>, 2010

### Session IV

room J4

#### Thin films I

*Chair: I-Wei Chen*

- |          |  |   |
|----------|--|---|
| 10:00 am | Ramamoorthy Ramesh<br>( <i>invited</i> ) | Domain wall nanoelectronics   |
| 10:30 am | Marin Alexe ( <i>invited</i> )           | Nanoscale phenomena in ferroelectric thin films   |
| 11:00 am | Wataru Sakamoto                          | Synthesis and properties of lead-free piezoelectric (K,Na)(Nb,Ta)O <sub>3</sub> thin films by chemical solution deposition                        |
| 11:15 am | Hasan Guleryuz                           | Fundamental studies of interactions during sol gel deposition of silica films   |
| 11:30 am | Kazuo Shinozaki ( <i>invited</i> )       | Control of crystal orientations in epitaxial oxide thin-films by introducing atomic layer buffers on Si and oxide substrates and its applications |
| 12:00 pm | Yuji Masubuchi                           | Crystallization and magnetic property of iron oxide nano-particles precipitated in silica glass matrix  |
| 12:15 pm | Daiji Ijuu                               | Preparation and characteristics of single-crystalline Bi <sub>0.5</sub> Na <sub>0.5</sub> TiO <sub>3</sub> thin films by a solid state process    |

#### Thin films II

*Chairs: Ramamoorthy Ramesh & Marin Alexe*

- |         |                                  |  |
|---------|----------------------------------|--|
| 2:00 pm | Nava Setter ( <i>invited</i> )   | Ferroelectric thin-films and reconfigurable electronics  |
| 2:30 pm | Stefano Gariglio ( <i>inv.</i> ) | Epitaxial ferroelectric Pb(Zr <sub>0.2</sub> Ti <sub>0.8</sub> )O <sub>3</sub> thin films on silicon: physical properties and applications |
| 3:00 pm | Kunihito Koumoto ( <i>inv.</i> ) | 3D superlattice ceramics of SrTiO <sub>3</sub> for thermoelectrics   |
| 3:30 pm | I-Wei Chen ( <i>invited</i> )    | Nanometallic crystalline and amorphous thin films with switchable transport properties   |
| 4:00 pm | Lorenz Bonderer                  | Free-standing ultrathin ceramic foils  |



4:15 pm Shinobu Fujihara

Sol-gel-derived transparent ceramic coatings with enhanced luminescent properties

## WEDNESDAY, SEPTEMBER 1<sup>ST</sup>, 2010

### Plenary lecture

room G3

8:30 am Markus Antonietti

Novel pathways towards metalcarbide and metalnitride nanostructures

### Session I

room G3

### Shaping II

*Chairs: Shiwei Wang & Jinlong Yang*

9:30 am Cécile Pagnoux (*invited*)

Ceramic shaping by destabilization of colloidal suspensions: a specific method applied with concentrated and diluted systems

10:00 am Rodrigo Moreno (*inv.*)

Slurry consolidation of complex oxides with perovskite-type structure

10:30 am Armin Dellert

Particle rotation as an origin of anisotropy in tape cast products

10:45 am Pierre-Marie Geffroy

Elaboration of  $\text{La}_{1-x}\text{Sr}_x\text{Fe}_{1-y}\text{Ga}_y\text{O}_{3-\delta}$ , multilayer membrane by tape-casting and screen printing

11:00 am Brahma Raju Golla

Drying of ceramic films from aqueous slurries

11:15 am Martin Trunec

Osmotic drying of gelcasted bodies in liquid desiccant

## WEDNESDAY, SEPTEMBER 1<sup>ST</sup>, 2010

Session II

room G7

### Modeling & Simulation

*Chairs: Sotiris Pratsinis & Henning Galinski*

9:30 am Andreas Greiner (*invited*) Simulation of micro powder injection moulding

10:00 am Kisuk Kang (*invited*) Design of electrode materials for lithium rechargeable batteries by integrating ab initio calculations with experiments

10:30 am Lu Jie A constitutive model for ceramics with bimodal pore distribution

10:45 am Dirk Kadau From powders to collapsible structures: discrete modeling

11:00 am Paul Bowen Atomistic simulations of dopant segregation to grain boundaries and surfaces for alumina and YAG ceramics and incorporation into a microstructural model

## WEDNESDAY, SEPTEMBER 1<sup>ST</sup>, 2010

Session III

room J3

Sintering II

*Chairs: Amiya Mukherjee & Kazuyuki Kakegawa*

9:30 am Guillaume Bernard-Granger (*invited*)

Transparent ceramic polycrystals elaborated by pressureless sintering / HIP and spark plasma sintering. Influence of the microstructure on the optical properties

10:00 am Devendraprakash Gautam Spark plasma sintering of nanocrystalline materials

10:15 am Prasit Thongbai Liquid-phase sintering phenomenon observed in high-permittivity dielectric (Li, Ti)-doped NiO ceramics

10:30 am Torsten E.M. Staab Optimising the de-binding and sintering of ceramics with respect to an energy efficient heat treatment

10:45 am Bhaskar Reddy Sudireddy Influence of binder removal parameters on the sintering

11:00 am Claudia Strehler Sintering of Si<sub>3</sub>N<sub>4</sub>/SiC composites for wood cutting tools

## WEDNESDAY, SEPTEMBER 1<sup>ST</sup>, 2010

### Session IV

room J4

#### Characterization II

*Chair: Sylvain Deville*

- |          |                   |   |
|----------|-------------------|---|
| 9:30 am  | Willi Pabst       | Preparation and characterization of porous ZTA ceramics   |
| 9:45 am  | Elif Eren         | Using ultrasonic test method for porosity characterization of porcelain bodies  |
| 10:00 am | Apiluck Eiad-ua   | Microstructural characterization of mechanochemically activated alumina   |
| 10:15 am | Uysal Idil        | Synthesis, microstructural and mechanical characterization of zinc, fluoride, chloride and carbonate doped hydroxylapatite                |
| 10:30 am | Robert Mücke      | Green density investigations of screen printed films by optical laser profilometry  |
| 10:45 am | Luke Tarrant      | Characterising the compressive failure of heterogeneous ceramic moulds using a combination of mechanical testing and modelling techniques |
| 11:00 am | Yeon Gil Jung     | Thermoelastic and thermomechanical characteristics of thermal barrier coatings with surface improvement                                   |
| 11:15 am | Vera Varazashvili | The dependence of thermal properties of garnet-type lanthanide-iron oxides on the metal ions parameters                                   |

# POSTER PRESENTATIONS

MONDAY, AUGUST 30<sup>TH</sup>, 2010, 6:00 PM:

POSTERS WITH ODD NUMBERS (A01,A03,B01,...)

TUESDAY, AUGUST 31<sup>ST</sup>, 2010, 4:00 PM:

POSTERS WITH EVEN NUMBERS (A02,A04,B02,...)

## A Particle synthesis

- |     |                        |   |
|-----|------------------------|---|
| A01 | Ryoji Kato             | Morphology of CuO through precipitation process under 2.45 GHz microwave irradiation  |
| A02 | Ikuo Yanase            | Synthesis of transition metal-substituted Al <sub>2</sub> Mo <sub>3</sub> O <sub>12</sub> compound and its structural phase transition      |
| A03 | Seo Dong Nam           | Effect of zeolite crystals on the formation and growth of carbon nanotubes (CNTs) by catalytic CVD  |
| A04 | Jairo A. Gómez-Cuaspud | Lanthanum strontium ferrite auto-combustion powder synthesis  |
| A05 | Jairo A. Gómez-Cuaspud | Gadolinium doped ceria auto-combustion powder synthesis   |
| A06 | Sheng-Chang Wang       | Synthesis of tin(II) oxyhydroxide and near monodispersed SnO <sub>2</sub> particle by dissolution and recrystallization of bulk SnO powders |
| A07 | Supawan Vichaphund     | Microwave synthesis of wollastonite from eggshells  |
| A08 | Pornapa Sujaridworakun | Synthesis and characterization of anatase nano powder from sodium titanate compound   |
| A09 | Jale Acer              | Production of TiO <sub>2</sub> powder from Ti <sub>6</sub> Al <sub>4</sub> V waste chips  |
| A10 | Arman Sedghi           | Effect of pre treatment of commercial PAN fibers on structure and properties of carbon fibers made from them                                |
| A11 | Rolf Janssen           | High output synthesis of functional ceramics by a dry powder approach – exemplified by KNN actuator compositions                            |
| A12 | Bernd Dittert          | Phase content controlled TiO <sub>2</sub> nanoparticles using the MicroJetReactor technology  |



- |     |                          |  |
|-----|--------------------------|--|
| A13 | Carlos A. Galán González | Comminution mechanism of $\text{ZrB}_2$ subjected to high-energy ball milling                              |
| A14 | Carlos A. Galán González | Effects of process-control agents on the high-energy ball milling of $\text{ZrB}_2$                        |
| A15 | Irina Nikolaenko         | Synthesis of superdispersed cobalt-doped tungsten carbide  |
| A16 | Irina Nikolaenko         | Products and materials obtained during processing of Leucoxene concentrate                                 |
| A17 | Regina Knitter           | Synthesis of lithium ceramics as tritium breeder materials   |
| A18 | I.V. Kud'                | The influence of the solid-state synthesis for the kinetics of the refractory metals disilicides formation |

## B Liquid phase particle synthesis

- |     |                    |   |
|-----|--------------------|---|
| Bo1 | Naonori Sakamoto   | Milling effect of $12\text{CaO} \cdot 7\text{Al}_2\text{O}_3$ fine powders fabricated by sol-gel processing                 |
| Bo2 | Arghavan Farzadi   | Effect of microwave irradiation on synthesis and behavior of biphasic calcium phosphate in simulated body fluid             |
| Bo3 | A Murat Avci       | A novel method for synthesizing flake-like strontium titanate particles   |
| Bo4 | Jin Wang           | Monocrystalline $\text{PbZr}_x\text{Ti}_{1-x}\text{O}_3$ nanowires: fabrication and properties                              |
| Bo5 | Takahiro Yamada    | Low-temperature preparation of $\text{MoSi}_2$ powders using a Na-Si melt   |
| Bo6 | Paulo Lisboa-Filho | Chemical synthesis and ceramic processing of $\text{ErMn}_{1-x}\text{Co}_x\text{O}_3$ manganites                            |
| Bo7 | Tiago Conti        | Electrical properties of highly conducting $\text{SnO}_2\text{:Sb}$ nanocrystals synthesized by a nonaqueous sol-gel method |
| Bo9 | Supawan Vichaphund | Effect of synthesis condition on morphology and yield of hydrothermally prepared $\text{SnO}_2$ nanorods                    |
| B10 | Kazumi Kato        | Characteristic behaviors of $\text{CeO}_2$ nanocubes synthesized by using a liquid-liquid interface                         |
| B11 | Mu-Tsun Tsai       | Photoluminescence of chromium-doped zinc aluminate phosphors  |

- B12 Mu-Tsun Tsai Photoluminescence properties of nanocrystalline Mn-doped  $\text{Zn}_2\text{SiO}_4$  phosphor gels
- B13 Antonio J. Sanchez-Herencia Synthesis of  $\text{Ni}(\text{OH})_2$  nanosheets by a sonochemical method in water.
- B14 Gabriela Byzynski Soares Synthesis and characterization of N-doped  $\text{TiO}_2$  nanoparticles by modified polymeric precursor method
- B15 Alieh Aminian Using hydrothermal method for synthesizing hydroxyapatite and Si-substituted hydroxyapatite nano powders

## C Microstructure & Properties

- Co1 Masakuni Ozawa Thermal stability and performance of porous La-modified  $\gamma\text{-Al}_2\text{O}_3$  catalyst
- Co2 Masakuni Ozawa Internal friction and oxygen relaxation of with  $\text{CeO}_2$  - stabilized  $\text{ZrO}_2$  ceramic
- Co3 Masakuni Ozawa Thermal stability, oxygen storage capacity and interface of alumina-supported ceria catalyst
- Co4 Ryszard Skulski Obtaining and properties of PBZST ceramics
- Co5 Vadym Bakumov Mechanical and tribological properties of polymer-derived Si/C/N miniparts fabricated by direct casting
- Co6 Andrea Dittmar Gas tight sintered material for high temperature sublimation setups
- Co7 Ernesto Flores-Rojas Influence of composition on smoothness in glazes for sanitary-ware applications
- Co8 Lovro Gorjan Mechanical properties of wick-debinded parts in air prepared by low-pressure injection molding
- Co9 Jeong Younghun Lead free  $\text{BaTiO}_3\text{-(Bi}_{0.5}\text{Na}_{0.5})\text{TiO}_3$  PTC thermistors fabricated by modified synthesis process
- C10 Ikuo Yanase Effect of P-substitution on negative thermal expansion property of  $\text{ZrV}_2\text{O}_7$  -related compound
- C11 Duygu Agaogullari Characterization of microstructural and thermal properties of cordierite/steatite ceramics prepared by using natural raw materials
- C12 Ayhan Mergen Fabrication and charecterisation of Cr and Co doped  $\text{Bi}_{1.5}\text{Zn}_{0.92}\text{Nb}_{1.5}\text{O}_{6.92}$  pyrochlores

C14	Kahraman Keskinbora	Texture – property relationship in ZnO
C15	Rattakarn Yensano	Magnetic properties of electrospun $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ nanostructures
C16	Yoshio Sakka	Texture development of feeble magnetic ceramics by colloidal processing in strong magnetic field
C17	Vassilios Zaspalis	Low loss MnZn-ferrite materials through
C18	Kazuma Muroi	Effect of template particle morphology on the microstructure of textured $\text{Ba}_4\text{Sm}_{9.33}\text{Ti}_{18}\text{O}_{54}$ prepared by templated grain growth
C19	Masashi Inoue	Synthesis of $\text{CeO}_2\text{-ZrO}_2$ solid solution by glycothermal method and its oxygen release capacity
C20	Ismail Ozgur Ozer	Coeffect of anisometric ZnO templates and inversion boundaries on the texture development in ZnO-based varistors produced by templated grain growth technique
C21	Keita Takahashi	A novel surface finishing for preventing strength decreasing due to wear damage in alumina ceramics
C22	Sasa Novak	Densification of SiC by electrophoretic deposition and polymer infiltration and pyrolysis process
C23	Manuel J. Melendo	Processing and mechanical properties of proton-conducting barium cerate ceramics

## D Composites & Metal-ceramic interfaces

Do1	Rémy Boulesteix	Polycarbosilanes as SiC-based ceramic precursors: synthesis and application to the elaboration of ZrC-SiC composites
Do2	Uma Thanganathan	Synthesis of hybrid composite membranes and their characterization for PEMFCs
Do3	Lukas Schlagenhauf	Electrochemical performance of agglomerated Pt thin films on polycrystalline and single crystal YSZ substrates
Do5	Piotr Putyra	Sintering of diamond composites with SHS prepared bonding phases
Do6	Evelyn Schlenther	Influence of carbon on Ti-activated infiltration of $\text{Al}_2\text{O}_3$ /steel-composites under atmospheric pressure
Do7	Martin Riley	Interactions between core and metal in investment casting

- Do8 Arman Sedghi Structure and properties of two dimensional carbon-carbon composites fabricated by different pyrolysis conditions
- Do9 Antonio J. Sanchez-Herencia Partial oxidation of metallic particles to control the microstructure of Ni-ceramic composites.
- D10 Rolf Janssen Synthesis of advanced metal-ceramic composites via controlled interface reactions
- D11 Sebastian Molin Ceramic coatings for improvement of high temperature corrosion resistance of porous stainless steels
- D12 Elena Landi Magnetic porous hydroxyapatite composites
- D13 Yeon Gil Jung Thermomechanical characteristics of thermal barrier coatings deposited using TriplexPro™-200 system
- D14 Eun Hee Kim Preparation of multi-phase composite based on Al<sub>2</sub>O<sub>3</sub> using surface modified carbon nanotube (CNT)

## E Shaping

- Eo1 Almuth Berthold Fluidized bed granulation of sodium tungsten manganese supported SiO<sub>2</sub> catalysts for the oxidative coupling of methane
- Eo2 Mehdi Salehi A development of BSCF Feedstock based on thermoplastic binder for production of flat and tubular oxygen separation membranes
- Eo3 Osman San Fabrication of multilayer glassy microporous filters and filtration testing for fine particles from a marble factory wastewater
- Eo4 Fangwei Guo Effect of HCl on packing and sintering of YSZ powder
- Eo5 Chika Matsunaga Effect of application ways of strong magnetic field
- Eo6 Emi Yaegaki Fabrication of grain-oriented Sr<sub>2</sub>NaNb<sub>5</sub>O<sub>15</sub> sheet by filtration forming method in rotating magnetic field
- Eo7 Rainer Schöftner Micro- and nanostructured ceramics by nanoimprint lithography and ceramic injection molding
- Eo8 Hans-Christian Schmidt New electrical servo drive compacting press - a major innovation for powder shaping
- Eo9 Toshimitsu Kanai Preparation of dry colloidal crystals without cracks

## F Thin films

- |     |                      |  |
|-----|----------------------|--|
| F01 | Meike V.F. Schlupp   | Thin film deposition by ultrasonic aerosol assisted chemical vapour deposition (UAA-CVD)   |
| F02 | Dieter Stender       | Crystallization behaviour of 3% yttria doped zirconia  |
| F03 | Anja Bieberle-Hütter | Impact of etching on microstructure and electrical conductivity of gadolinia doped ceria thin films  |
| F04 | Anna Evans           | Electrochemical characterisation of free-standing 3 $\mu\text{m}$ thin yttria-stabilised-zirconia electrolyte foils for micro-solid oxide fuel cells |
| F05 | Matthias Bator       | Preparation and characterization of multiferroic $\text{TbMnO}_3$ and $\text{TmMnO}_3$ thin films  |
| F06 | Yi Hu                | Pulsed laser deposition and Raman study of multiferroic $\text{TbMnO}_3$ thin films  |
| F07 | Li Luo               | From Al-doped ZnO nanocrystals to transparent conductive films   |
| F08 | Takashi Hayami       | Deposition of hydroxyapatite thin films on titanium substrates and assessment of interfacial adhesion using a scratch test                           |
| F10 | Misha Sinder         | Reaction of thin conductor film and silicon substrate by RF heating: Heat explosion theory approach  |
| F11 | Sayaka Tsukakoshi    | Properties of siliceous film on polycarbonate by vacuum ultraviolet irradiation: effect of intermediate silane layer                                 |
| F12 | Hiroaki Nishikawa    | Synthesis of magnesium-containing apatite thin film and its biocompatibility investigated by in-vitro cell cultivation                               |
| F14 | Dirk Penner          | Thermal stable and photocatalytic active titania for ceramic surfaces  |
| F15 | Thomas Ryll          | Electrochemical characterization of lanthanum nickelate thin films deposited by spray pyrolysis  |
| F16 | Julia Martynczuk     | Local chemistry and microstructure of strained gadolinia-doped ceria grains in thin films  |
| F18 | Begoña Ferrari       | Growth of silica mesoporous coatings induced by electrophoresis  |
| F19 | Jennifer L.M. Rupp   | Microstrain and oxygen ion conductivity of thin films  |
| F20 | Barbara Scherrer     | Phase evolution and electrical properties of spray pyrolyzed zirconia-based thin films with various yttria contents                                  |

F21 Alexander Nold New aspects for the deposition of coatings via EPD

## G Porous ceramics

G01 Jan Luyten Three dimensional fiber deposition as a shaping process for porous materials

G02 Sandrina Fernandes Tailoring the microstructure of porous alumina for improved isotope release performance of ISOL targets

G03 Judit Heinecke Synthesis and properties of cellular alumina articles produced from radiation curable dispersions

G04 Jeong-gu Yeo Synthesis and thermophysical properties of silica aerogels from sodium silicates

G05 Jeong-gu Yeo Synthesis and characterization of nanoporous carbon aerogels synthesized under ambient pressure

G07 Ruta Svinka Highly porous ceramic by slip casting of concentrated clay and oxides suspension

G08 Eva Gregorová Process control and optimized preparation of porous alumina ceramics by starch consolidation casting

G09 Rosali Moellmann Hybrid material based on hydroxyapatite and collagen by emulsion technique for bone implants

G10 Rosali Moellmann Design of an alumina 3D-cell culture scaffold and new cell counting technique via carbon measurements

G11 Elena Tervoort General route for the assembly of functional inorganic microcapsules

G12 Franziska Krauss Juillerat Self-setting particle stabilized foams with hierarchical pore structures

G13 Andris Butlers Porous titania/alumina refractory ceramic and its application as filter material

G14 Urs T. Gonzenbach From porous ceramics to mesoporous hollow microcapsules: an insight into the world of particle stabilization

G15 Ethel Claudia Bucharsky Preparation of transparent open celled foams and its morphological characterization employing volume image analysis

## H Dispersion & Rheology

Ho1	Steven Walker	Biphasic colloidal inks for direct write assembly of 3D ceramic structures
Ho2	David Megias-Alguacil	Adsorption of carboxylic acids onto alumina substrates
Ho3	Paul Bowen	Dispersion, colloidal stability and rheology - from interparticle interaction energy calculations to predicting yield stress using the YODEL model
Ho4	Natalia Pawlak	The study of the rheological properties of concentrated alumina slurries for indirect solid freeform fabrication
Ho5	Mikolaj Szafran	New dispersants and low toxic binders in ceramic processing
Ho6	Christian Oetzel	Electro-kinetic properties and stability of ceramic particles in organic solvents
Ho7	Begoña Ferrari	Dispersion and stabilisation of YSZ nanoparticles obtained under supercritical hydrothermal conditions

## J Modeling & Simulation

Jo1	Jaroslav Kovacik	Percolation threshold and mechanical properties of porous ceramics
Jo2	Jakob Kuebler	Simulation and validation of thermo-mechanical stresses in planar SOFCs
Jo3	David Megias-Alguacil	Liquid bridges between ceramic particles for foams and emulsions
Jo5	Lingfei Zhang	Microstructure – mechanical property correlations of cordierite foam by tomography and finite element model
Jo6	Toni Ivas	The chemisorptions of Co on ceria surface ab-initio study

## K Sintering

- |     |                     |   |
|-----|---------------------|---|
| Ko1 | Aoki Tomohiro       | Fabrication of layered $\text{TiS}_2$ -based thermoelectric elements by using centrifugal heating method  |
| Ko2 | Olivier Guillon     | Sintering of patterned ceramic layers   |
| Ko3 | Yang Zhong-Zheng    | Preparation of Bauxite-based homogenized Mullite Groggs with Bauxite and Coal Gangue  |
| Ko4 | Olivier Guillon     | Constrained sintering of glass films: microstructure evolution assessed through synchrotron micro-computed tomography   |
| Ko5 | Takuma Takahashi    | Fabrication of c-axis-oriented strontium barium niobate by a rotating magnetic field and its grain growth during subsequent sintering                                       |
| Ko6 | Juan Peña-Martínez  | Sintering behaviour and high densification for $\text{ABaCo}_2\text{O}_{5+\delta}$ (A= Pr, Gd)  |
| Ko7 | Ayhan Mergen        | Effect of In, Ce and Bi dopings on sintering and dielectric properties of $\text{Ba}(\text{Zn}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ceramics                                    |
| Ko8 | Werner Bauer        | Material and process-related factors influencing the healing of surface defects of zirconia micro parts during thermal debinding  |
| Ko9 | Eduardo Antonelli   | Laser scanning sintering: a two step sintering process in the thick films preparation   |
| K10 | Kimura Takumi       | Fabrication of crystal-oriented bismuth titanate family piezoelectronic ceramics by a high magnetic field orientation and subsequent reaction sintering                     |
| K11 | Horng-Hwa Lu        | Fabrication and microstructure of $\text{TiN}/\text{Si}_3\text{N}_4$ based nanocomposite by spark plasma sintering  |
| K12 | Kenta Tsuchiya      | Superplasticity deformation of hydroxyapatite ceramics with $\text{B}_2\text{O}_3$ or $\text{Na}_2\text{O}$ addition fabricated by pulse current pressure sintering         |
| K13 | Alain Bataille      | Plasticity mechanisms and densification of alumina in SPS   |
| K14 | Benedikt Seeber     | Influence of sintering conditions on the properties of particle-stabilized porous ceramics  |
| K15 | Mariangela Lombardi | Sol-gel synthesis and sintering behaviour of innovative bioactive glass-ceramics  |
| K16 | Mariangela Lombardi | Role of immiscible and miscible second phases on the sintering kinetics and microstructural development of nano-crystalline $\alpha\text{-Al}_2\text{O}_3$ -based materials |



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|-----|----------------|--|
| K17 | Bakut Borkoev  | The sinterability analysis in wollastonite-fluxes compositions   |
| K18 | Hesham Mesbah  | Effect of prolonged sintering time at 1200°C on the phase transformation and reactivity with moisture of fired kaolinite |
| K19 | Alexander Nold | Synthesis and sintering of nanosized borosilicate glass powders made via laser ablation                                  |

## NOTES

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