

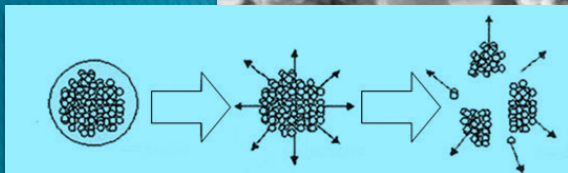
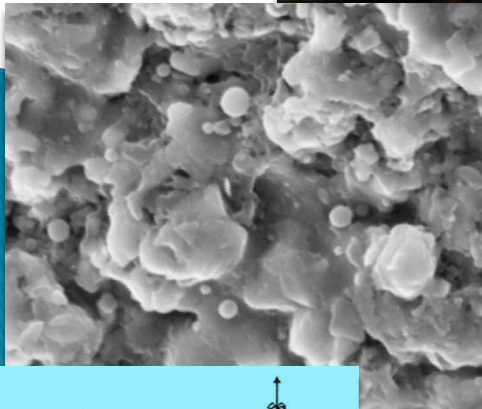
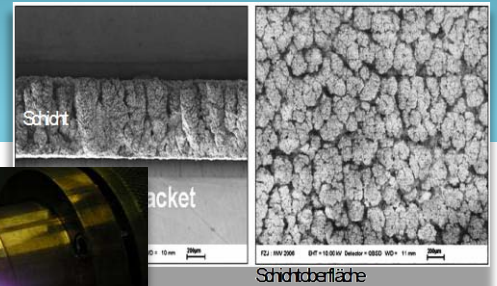
Thermal Spraying with Liquid Feedstocks – Process Development, Coating Properties and Applications

Final program !

Winter School

March, 20th – 22nd, 2013

Commundo Conference Hotel Stuttgart, Germany



Scope of the event:

Thermal spraying using liquid precursors or suspensions containing fine and ultra fine powder particles lead to coatings with a unique microstructure that significantly differs from conventionally sprayed coatings.

The potential of these coatings is well known and has gained vital interest among the scientific and industrial community.

It is expected, that thermal spraying with liquid feedstocks will give substantial contributions in numerous industrial key applications like biomedicine, energy conversion, catalysis, automotive, aerospace and more.

Fabrication routes and processing of solutions and suspension feedstocks containing fine primary particles strongly differ from conventional spray materials preparation. Especially in case of suspensions, their storage and handling requires distinct expertise.

Flame interaction of liquids and suspensions as well as coating formation phenomena are key issues to gain the necessary process knowledge.

This is required to fully control and shape the liquid feedstock based spray process and raise the technology to an industrial production level.

- Learn from the experts!
- 18 renowned lecturers coming from universities, science labs and industry share their knowledge of thermal spraying with liquids and report about latest developments in this field.
- All aspects and issues are covered in three sessions:
 - Fundamentals of the Process
 - Applications & Practice
 - Equipment
- All presentations will be given in English
- See full program on next page

Who Should Attend?

All professionals (senior scientists, engineers and consultants) who are in touch with or working in the field of thermal spraying and surface technology. Young scientists and students, who are interested in new developments of thermal spray processes.

- Experienced thermal spray users in industry and research labs working on advanced spray methods, like suspension spraying SPS and HVSFS, HVOF with agglomerated powder materials.
- Powder manufacturers and developers in industry and research labs working on nano and submicron powder feedstocks, agglomerated feedstocks and powder based suspensions.
- Equipment manufacturers and developers for thermal spray equipment (feeder, spray guns etc.)

What is included?

- Two day courses
- Printed Course Materials
- Course Certificate
- Two nights accommodation
- Lunch (3 times)
- IFKB Lab Tour
- Daimler Car museum
- Social event & Conference dinner

Course Fee:

Full package:	1050 EUR
Full package (students):	750 EUR
Courses only*:	680 EUR

*without hotel accommodation and evening program, lunch still included!



List of Speakers

Prof. Robert Vaßen	Research Center Jülich, Germany
Dr. Georg Mauer	Research Center Jülich, Germany
Prof. Lech Pawlowski	University of Limoges SPCTS, France
Prof. Armelle Vardelle	University of Limoges ENSIL, France
Prof. Ghislaine Bertrand	Institut Carnot CIRIMAT, Toulouse, France
Prof. Thomas Graule	Eidgenössische Materialprüfungs- & Forschungsanstalt EMPA, Dübendorf, Switzerland
Dr. Lutz-Michael Berger	Fraunhofer Institute IWS, Dresden, Germany
Prof. Ghislain Montavon	University of Technology UTBM, Belfort, France
Dr. Giovanni Bolelli	University of Modena UNIMORE, Italy
Dr. Luca Lusvarghi	University of Modena UNIMORE, Italy
Prof. Petri Vuoristo	Tampere University of Technology TUT, Finland
Dr. Stefan Mende	NETZSCH-Feinmahltechnik GmbH, Selb, Germany
Torsten Remmler	Malvern Instruments GmbH, Herrenberg, Germany
Dr. Thomas Schläfer	GTV Verschleiss-Schutz GmbH, Luckenbach, Germany
Dipl.-Ing. Andreas Rempp	University of Stuttgart IFKB, Germany
Dipl.-Ing. Philipp Müller	University of Stuttgart IFKB, Germany
Dr. Andreas Killinger	University of Stuttgart IFKB, Germany

Wednesday 20.03.2012 – Session 1: Fundamentals (F)

Thursday 21.03.2012: – Session 2: Applications (A)

Friday 22.03.2012: – Session 3: Equipment & Practise (E)

Time schedule

	Time slot	Speaker	Organisation	Title of the presentation		
	09:00 - 12:00 Registration					
	12:00 - 13:00 Lunch					
	13:00 - 13:15 Welcome	L. Pawlowski A. Killinger	University of Limoges SPCTS, France University of Stuttgart IFKB, Germany	Welcome & Words of introduction		
	13:15 - 14:00 presentation 1	A Killinger	University of Stuttgart IFKB, Germany	Introduction to precursor and suspensions spraying		
	14:00 - 14:45 presentation 2	A. Vardelle	University of Limoges ENSIL, France	Fundamentals of liquid-plasma interaction: from liquid injection to droplet formation		
	14:45 - 15:00 Coffee break					
Wednesday	15:00 - 15:45 presentation 3	L. Pawlowski	University of Limoges SPCTS, France	Fundamentals of coating formation and resulting coating properties		
20.03.2013	15:45 - 16:30 presentation 4	G. Bertrand	Institut Carnot CIRIMAT, Toulouse, France	Suspension and/or solutions: Why and how to control this key step ?		
Fundamentals	16:30 - 16:45 Coffee break					
	16:45 - 17:30 presentation 5	G. Maurer	Research Center Jülich, Germany	Process Diagnostics in Suspension Plasma Spraying		
	17:30 - 18:15 presentation 6	G. Montavon	University of Technology UTBM, Belfort, France	Safety, environmental issues, regulations and costs related to liquid thermal spray processes		
	19:00 - 23:00 Dinner					
Thursday	08:00 - 08:45 presentation 7	L.-M. Berger	Fraunhofer Institute IWS, Dresden, Germany	Thermal Spraying with Suspensions - Economics and Applications		
21.03.2013	08:45 - 09:30 presentation 8	R. Vaßen	Research Center Jülich, Germany	Application of SPS in thermal barrier coating systems and in solid oxide fuel cells		
Session 2:	09:30 - 09:45 Coffee break					
Applications	10:00 - 10:45 presentation 9	P. Vuoristo	Tampere University of Technology TUT, Finland	Properties of suspension and solution sprayed MnCo oxide coatings for SOFC metallic interconnectors		
	10:45 - 11:30 presentation 10	G. Bolelli	University of Modena UNIMORE, Italy	Bio ceramic coatings by liquid feedstock spraying: processing and properties		
	11:30 - 11:45 Coffee break					
	11:45 - 12:30 presentation 11	L. Lusvarghi	University of Modena UNIMORE, Italy	Tribological behaviour and peculiarities of coatings by liquid feedstock spraying		
	12:30 - 13:00 presentation 12	P. Müller	University of Stuttgart IFKB, Germany	Industrial applications for HVFS		
	13:00 - 14:00 Lunch					
	14:00 - 15:00 Lab Tour					
	15:00 - 18:00 Daimler Museum					
	20:00 - 23:00 Conference Dinner					
Friday	08:30 - 09:15 presentation 13	T. Graule	EMPA, Dübendorf, Switzerland	Nanoparticle stabilisation in aqueous and organic medium - the challenge of surface modifications		
22.03.2013	09:15 - 10:00 presentation 14	T. Schläfer	GTV Verschleiss-Schutz GmbH, Germany	Spray equipment for liquid thermal spray processes		
Session 3:	10:00 - 10:15 Coffee break					
Equipment &	10:15 - 11:00 presentation 15	A. Rempp	University of Stuttgart IFKB, Germany	HVOF torch concept for suspension spraying		
Practise	11:00 - 11:45 presentation 16	S. Mende	NETZSCH-Feinmahntechnik GmbH, Germany	Analysis and Influence of the Grinding Progress for Milling Processes down to the Nanometer Size Range		
	11:45 - 12:00 Coffee break					
	12:00 - 12:45 presentation 17	T. Remmler	Malvern Instruments GmbH, Germany	Characterizing Suspensions: Particles size distribution and rheological analysis		
	12:45 - 13:00 Closing remarks	L. Pawlowski A. Killinger	University of Limoges SPCTS, France University of Stuttgart IFKB, Germany	Closing remarks		
	13:00 - 14:00 Lunch					



Contact person:

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Conference Hotel:

Commundo Tagungshotel
Universitätsstraße 34
70569 Stuttgart

Hotline: 0800 8330 330

Email: service-center@commundo-tagungshotels.de

www.commundo-tagungshotels.de

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Bank transfer:

Indicate: Your name & company

Keyword: Winterschool

Recipient of payment: NMT TTI GmbH

VAT-ID: DE194532993

BW-BANK STUTTGART

IBAN: DE91 6005 0101 7871 5044 77

SWIFT: SOLADEST

REGISTRATION FORM

Please register before 16 February 2013. The course is limited to 30 participants.
Fax: +49 711 68568236 · Email: winterschool@ifkb.uni-stuttgart.de
I would like to register for Stuttgart Winterschool "Spraying with liquid feedstock"
20.-22. March 2013 Commundo Hotel Stuttgart

Participant data:

Name and Surname:

Profession:

Company / University:

Street:

ZIP code and City:

Address:

Country:

Email:

Phone:

Fax:

Full fee (1050 EUR)
VAT included

Full fee student (750 EUR)
VAT included

Reduced fee (680 EUR)
VAT included

Conference fee payment:

Please send the registration sheet and a copy of the bank transfer to: winterschool@ifkb.uni-stuttgart.de
After receiving your registration, an invoice/confirmation will be sent to you by email.

Bank transfer:

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Register before 16.12.2012
and save 50 EUR !!
(Full fee: 1000 EUR)
(Student fee: 700 EUR)





Directions

Commundo Tagungshotel
 Universitätsstraße 34
 70569 Stuttgart
 Hotline: 0800 8330 330



SUSPENSIONSFEEDER



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