

CONVENTION CENTER
STADTHALLE KARLSRUHE
LEVEL 0



LIST OF EXHIBITORS

- B3 AMETEK GmbH, Meerbusch
- B1 C3 Prozess- und Analysetechnik GmbH, Haar
- F2 DECHEMA Gesellschaft für Chemische Technik und Biotechnologie e.V., Frankfurt am Main
- F5 Deutsche METROHM GmbH & Co. KG, Filderstadt
- C2 EKTechnologies GmbH, Wesel
- G1 hhp Relax Lounge, Karlsruhe
- D3 Hiden Isochema Ltd., Warrington, UK
- D2 Ingenieurbüro Peter Schrems (IPS), Münster
- C1 IOLITEC Ionic Liquids Technologies GmbH, Heilbronn
- C3 Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen
- B2 L.O.T.- ORIEL GmbH & Co. KG, Darmstadt
- G3 Maney Publishing, Leeds, UK
- F1 PLANSEE SE, Reutte/Tirol, Austria
- G2 Springer-Verlag GmbH, Heidelberg
- D1 ThyssenKrupp VDM GmbH, Werdohl

POSTER TOPICS

- A Building Materials and Systems for Construction
- B Catalysts for Sustainable Energy Applications
- C Electrochemical Energy Storage: Batteries and Supercapacitors
- D High-Throughput Technologies for Energy Materials
- E Hydrogen Storage

PROGRAMME

July 4 – 8, 2010
Convention Center Karlsruhe / Germany

**First International Conference
on Materials for Energy**

www.dechema.de/enmat2010



Organized by



Supported by



CONFERENCE CHAIRS

Horst Hahn	Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/D
Alan J. Hurd	Los Alamos National Laboratory, NM/USA
Wolfram Münch	EnBW Energie Baden-Württemberg AG, Karlsruhe/D
Abdelilah Slaoui	Laboratoire InESS – CNRS, Strasbourg/F
Cynthia A. Volkert	University of Göttingen/D

SYMPOSIA CHAIRS

MATERIALS FOR LARGE POWER PLANTS

Robert S. Averback	University of Illinois, IL/USA
Nazlim Bagcivan	RWTH Aachen/D
Damien Féron	CEA, Gif-sur-Yvette/F
Francisco J. Pérez-Trujillo	Universidad Complutense de Madrid/ES
Eberhard Roos	University of Stuttgart/D
Michael Schütze	DECHEMA e.V., Frankfurt am Main/D
Lorenz Singheiser	Forschungszentrum Jülich GmbH/D
Wim G. Sloof	Delft University of Technology/NL
David Young	University of New South Wales, Sydney/AUS

NANOSTRUCTURES FOR ENERGY APPLICATION

Pulickel M. Ajayan	Rice University, Houston, TX/USA
S. Ravi P. Silva	University of Surrey, Guildford/UK

MATERIALS FOR FUEL CELLS

Ellen Ivers-Tiffée	Karlsruhe Institute of Technology/D
Willem J. Quadackers	Forschungszentrum Jülich GmbH/D

MATERIALS FOR RENEWABLE ENERGY CONVERSION

Eckhard Dinjus	Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/D
Gilles Flamant	CNRS, Font-Romeu/F
David S. Ginley	National Renewable Energy Laboratory NREL, Golden, CO/USA
Christian Jooss	University of Göttingen/D
François Ropital	IFP, Vernaison/F

THERMOELECTRICS: FROM HIGHLY EFFICIENT STRUCTURES TO HIGH-TEMPERATURE GENERATORS

Kornelius Nielsch	University of Hamburg/D
Marie-Christine Record	University of Aix-Marseille/F

MATERIALS FOR ENERGY STORAGE

Brigitte Baretzky	Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/D
Regine Geerk-Hedderich	nanomat, Karlsruhe/D
Dmitry Shchukin	MPI for Colloidal Research, Golm/D
Rainer Tamme	German Aerospace Center, Stuttgart/D

HYDROGEN STORAGE

Maximilian Fichtner	Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen/D
Andreas Züttel	EMPA, Duebendorf/CH

ELECTROCHEMICAL ENERGY STORAGE: BATTERIES AND SUPERCAPACITORS

Kai-C. Möller	Fraunhofer ISC, Würzburg/D
Martin Winter	University of Münster/D

LIGHT-WEIGHT STRATEGIES, CONCEPTS, DESIGN, MATERIALS, PROCESSES AND METHODS

Frank Henning	Fraunhofer ICT, Pfinztal/D & Karlsruhe Institute of Technology/D
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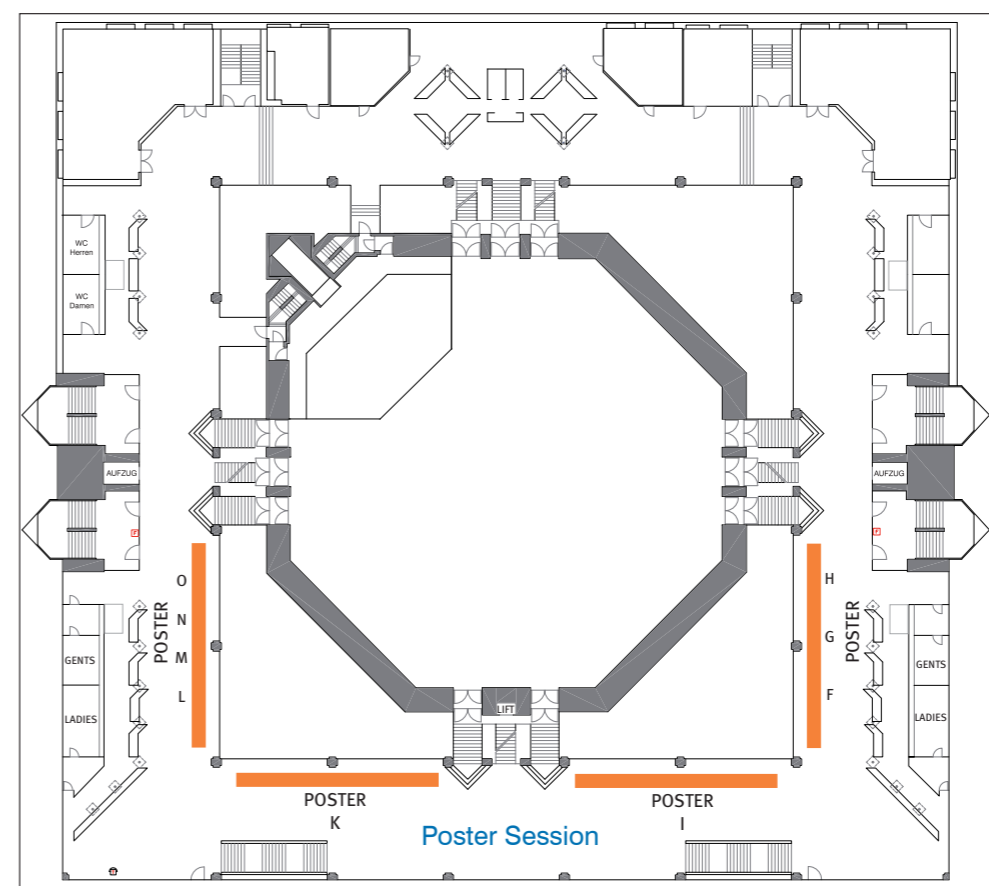
CATALYSTS FOR SUSTAINABLE ENERGY APPLICATIONS

Marie-Isabelle Baraton	Université de Limoges/F
Johannes A. Lercher	TU München/D

MATERIALS RESEARCH FOR SOLID-STATE LIGHTING

Elmar KeBénich	BASF Future Business GmbH, Ludwigshafen/D
Julia Phillips	Sandia National Laboratories, Albuquerque, NM/USA

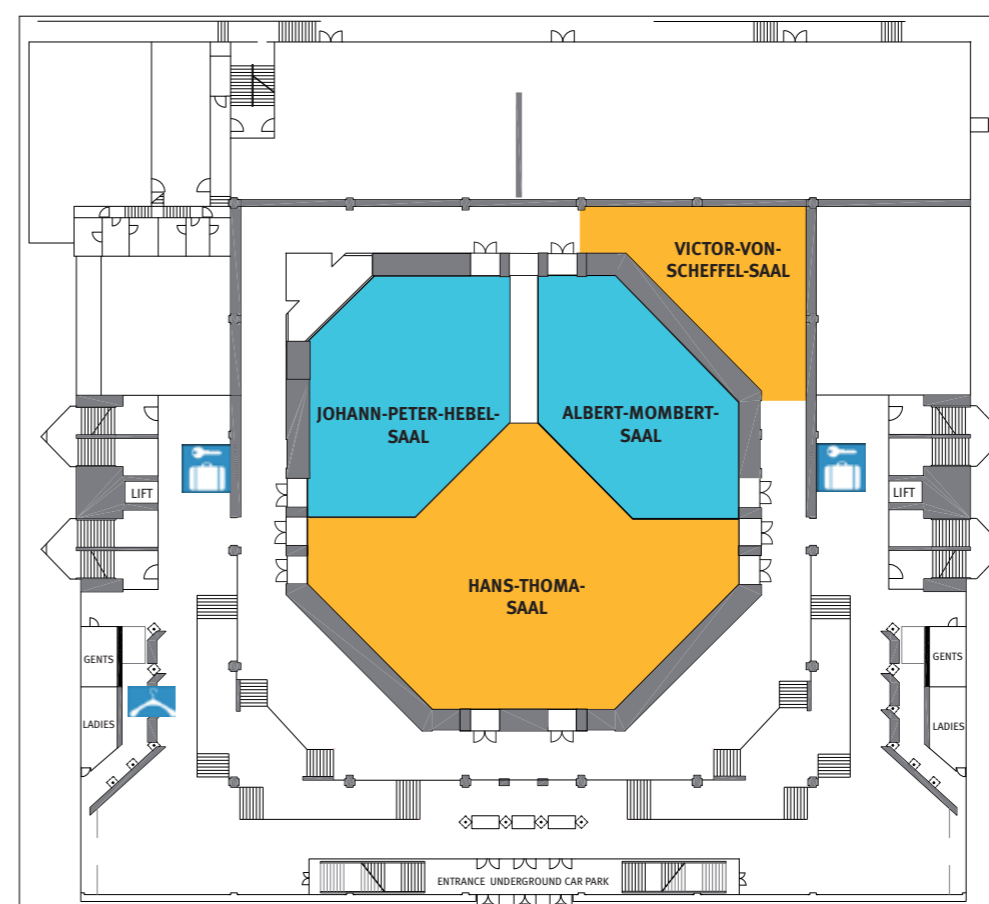
**CONVENTION CENTER
STADTHALLE KARLSRUHE
LEVEL +2**



POSTER TOPICS

- F Light-Weight Strategies, Concepts, Design, Materials, Processes and Methods
- G Materials for Energy Applications
- H Materials for Energy Storage
- I Materials for Fuel Cells
- K Materials for Large Power Plants
- L Materials for Renewable Energy Conversion
- M Materials Research for Solid-State Lighting
- N Nanostructures for Energy Applications
- O Thermoelectrics – from Highly Efficient Structures to High-Temperature Generators

LEVEL -1



CONFERENCE AND SYMPOSIA CHAIRS 2

PROGRAMME

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LECTURE PROGRAMME

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Thursday, July 8, 2010	25 – 29

POSTER SESSIONS / POSTER PROGRAMME / LAST MINUTE POSTER 30 – 45

MAP OF CONFERENCE VENUE 47 – backside

CONFERENCE ORGANIZER

DECHEMA
 Gesellschaft für Chemische Technik und Biotechnologie e.V.
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 60486 Frankfurt am Main
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www.dechema.de/enmat2010

EXHIBITION

Please visit the booth of the following exhibitors:

AMETEK GmbH, Meerbusch, Germany	B3
C3 Prozess- und Analysetechnik GmbH, Haar, Germany	B1
DECHEMA e.V., Frankfurt am Main, Germany	F2
Deutsche METROHM GmbH & Co. KG, Ionenanalytik, Filderstadt, Germany	F5
EKTechnologies GmbH, Wesel, Germany	C2
hhp Relax Lounge, Karlsruhe, Germany	G1
HIDEN ISOHEMA, Warrington, UK	D3
Ingenieurbüro Peter Schrems (IPS), Münster, Germany	D2
IOLITEC Ionic Liquids Technologies GmbH, Heilbronn, Germany	C1
Karlsruhe Institute of Technology, Germany	C3
L.O.T.-ORIEL GmbH & Co. KG, Darmstadt, Germany	B2
Maney Publishing, Leeds, UK	G3
PLANSEE SE, Reutte/Tirol, Austria	F1
Springer-Verlag GmbH, Heidelberg, Germany	G2
ThyssenKrupp VDM GmbH, Werdohl, Germany	D1

Monday, July 5, 2010

08:00 – 09:30	Registration & Coffee				
Room:	Friedrich-Weinbrenner-Saal – Level 0				
09:30 - 10:00	OPENING CEREMONY E. Umbach, President of the Karlsruhe Institute of Technology (KIT)/D A.J. Hurd, Los Alamos National Laboratory, NM/USA A. Förster, DECHEMA e.V., Frankfurt am Main/D				
10:00 - 11:00	PLENARY LECTURE Controlling the functionality of materials for sustainable energy John Sarrao, Los Alamos National Laboratory, NM/USA				A/2
11:00 - 11:30	Coffee Break				
11:30 - 12:30	PLENARY LECTURE Energy technology perspectives for a sustainable energy provision Alfred Voß, University of Stuttgart/D				A/3
12:30 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment				
ROOM:	Johann-Peter-Hebel-Saal Level -1	Hans-Thoma-Saal Level -1	Clubraum Level 0	Viktor-von-Scheffel-Saal Level -1	Alfred-Mombert-Saal Level -1
	Materials for Large Power Plants	Materials for Fuel Cells SOFC	Materials for Fuel Cells PEMFC	Hydrogen Storage	Light-Weight Strategies, Concepts, Design, Materials, Processes and Methods
Chairs:	W.G. Sloof	W.J. Quadackers	E. Ivers-Tiffée	M. Fichtner	F. Henning
14:00 - 14:20	KEYNOTE M.W. Barsoum A/157	W.A. Meulenber A/39	D. Bayer A/11	C. Weidenthaler B/669	M. Kriescher B/935
14:20 - 14:40	J. Joos A/42	M. Schieda A/14	C. Frommen B/670	K. Sadayappan B/937	
14:40 - 15:00	H. Sarmiento Klapper A/158	S. Pavlova A/45	J. Richards A/15	E.G. Bardaji B/673	L.F. Berg B/940
15:00 - 15:20	G. Vesper A/160	C. Niedrig A/48	KEYNOTE D. Stolten A/18	I. Lindemann B/676	J. Kuppinger B/943
15:20 - 15:40	K. Alexandrov A/161	I.W.M. Brown A/51	K. Taube B/677	A. Piller B/946	
15:40 - 16:10	COFFEE BREAK				
	Materials for Large Power Plants	Materials for Fuel Cells SOFC	Materials for Fuel Cells PEMFC	Hydrogen Storage	Light-Weight Strategies, Concepts, Design, Materials, Processes and Methods
Chairs:	W.G. Sloof	A. Weber	D. Stolten	A. Züttel	F. Henning
16:10 - 16:30	S.B. Li A/164	G. Falk A/54	M. Sharifi A/19	KEYNOTE J.C. Zhao B/678	R. Chaudhari B/949
16:30 - 16:50	D. Jong A/165	T. Franco A/57	A. Pfrang A/20		T. Holtermann B/952
16:50 - 17:10	M. Hänsel A/166	P. Huczowski A/60	W.G. Bessler A/23	F. Dolci B/680	M. Lewandowska B/954
17:10 - 17:30	S.A. Kuznetsov A/169	KEYNOTE N. Christiansen A/61	M. Arenz A/24	M.J. van Setten B/683	Y. Taga B/957
17:30 - 17:50	C. Honvault A/171		T. Wadayama A/27	B. Dam B/686	J. Hohe B/960
17:50 - 20:00	POSTER SESSION 1 Authors of posters are expected to be available at their poster during the Poster Session 1				

The number behind the authors name indicates the page number inside the book of extended abstracts Book A or B.

Tuesday, July 6, 2010

Room:	Johann-Peter-Hebel-Saal Level -1	Hans-Thoma-Saal Level -1	Clubraum Level 0	Viktor-von-Scheffel-Saal Level -1	Alfred-Mombert-Saal Level -1	Forum 1 Level 0
	Materials for Large Power Plants	Materials for Renewable Energy Conversion	Materials for Fuel Cells PEMFC	Hydrogen Storage	Catalysts for Sustainable Energy Applications	
Chairs:	E. Roos & L. Singheiser	E. Dinjus & F. Ropital	W.G. Bessler	J.C. Zhao	C. Breitkopf	
09:00 - 09:20	K. Schmidt A/174	R. Palkovits A/232	J. Becker A/30	A. Borgschulte B/687	KEYNOTE H.-J. Fecht B/837	
09:20 - 09:40	J.R. Pauls A/177	M.M. Titirici A/326	U. Kramm A/31	N. Hanada B/690		
09:40 - 10:00	J. Pasternak A/179	M. Roßbach A/329	S. Pacheco Benito A/32	I. Utz B/693	G. Vesper B/838	
10:00 - 10:20	KEYNOTE V.K. Vasudevan A/180	E. Sulman A/332	M. Boaventura A/35	T. Schmidt B/696	B. Reznik B/839	
10:20 - 10:40		A.V. Chistyakov A/335	R. Devanathan A/38	Y.F. Khalil B/698	P. Jana B/842	
10:40 - 11:10	COFFEE BREAK					
	Materials for Large Power Plants	Materials for Renewable Energy Conversion	Materials for Fuel Cells SOFC	Hydrogen Storage	Catalysts for Sustainable Energy Applications	
Chairs:	E. Roos & L. Singheiser	E. Dinjus & F. Ropital	N. Christiansen	M. Hirscher	C. Breitkopf	
11:10 - 11:30	V.K. Vasudevan A/181	T. Riitonen A/338	KEYNOTE G.H. Meier A/62	J.R. Hatrick-Simpers B/700	V.A. Sadykov B/845	
11:30 - 11:50	R. Pillai A/182	T.J.S. Schubert A/341		H. Li B/702	O. Metin B/848	
11:50 - 12:10	V.V. Polyakova A/185	V.V. Zhmakina A/343	L. Niewolak A/63	J. Huot B/705	J. Valyon B/849	
12:10 - 12:30	T. Dudziak A/188	L. Couture A/346	D. Liu A/64	K. Morita B/707	KEYNOTE A. Bell B/852	
12:30 - 12:50	E. Wirth A/191	N. Boukis A/348	K. Lu A/67	W.P. Kalisvaart B/710		
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment					
	Materials for Large Power Plants	Materials for Renewable Energy Conversion	Materials for Fuel Cells SOFC	Hydrogen Storage	Catalysts for Sustainable Energy Applications	13:30 – 18:00
Chairs:	D. Féron	C. Jooss	D. Gerthsen	J. Huot	H.-J. Fecht	Workshop for Graduate Students
14:00 - 14:20	C. Fazio A/193	O. Diwald A/351	KEYNOTE F. Tietz A/68	T.G. Voskuilen B/713	N. Brun B/853	Functional Nanostructures Applied in Energy Storage and Energy Conversion Systems
14:20 - 14:40	C. Dethloff A/196	S. Fiechter A/352		U. Mueller B/716	S.M. Coman B/856	
14:40 - 15:00	A. Moeslang A/199	R. van de Krol A/353	A. Leonide A/69	M. Russina B/717	J.F. Puna B/859	
15:00 - 15:20	C.A. Williams A/200	KEYNOTE K. Domen A/356	A. Muramatsu A/72	KEYNOTE M. Hirscher B/718	Y. Sekine B/862	
15:20 - 15:40	C.-L. Chen A/202		D. Klotz A/75		M. Soorholtz B/865	Separate registration necessary
15:40 - 16:10	COFFEE BREAK					
	Materials for Large Power Plants	Materials for Renewable Energy Conversion	Materials for Fuel Cells SOFC	Hydrogen Storage	Catalysts for Sustainable Energy Applications	
Chairs:	D. Féron	C. Jooss	F. Tietz	A. Borgschulte	C. Bianchini	
16:10 - 16:30	KEYNOTE P. Bellon A/205	KEYNOTE M.D. Allendorf A/357	A.J. Darbandi A/78	P. Adelhelm B/720	KEYNOTE J. Ye B/868	
16:30 - 16:50			J. Hayd A/79	J.R. Ares B/721		
16:50 - 17:10	V. Widak A/208	U. Wijayantha A/360	N. Nwosu A/82	S.K. Singh B/724	M.-I. Baraton B/869	
17:10 - 17:30	Z. Oksiuta A/211	Q.-H. Zhang A/361	C. Rockenhäuser A/85	A. Remhof B/727	C. Zhao B/871	
17:30 - 17:50	V.K. Vasudevan A/214	B. Wood A/368	I. Stijepovic A/88	M.D. Allendorf B/730	S. Castillo B/873	

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Wednesday, July 7, 2010

Room:	Friedrich-Weinbrenner-Saal – Level 0					Forum 1 – Level 0
08:45 - 09:45	PLENARY LECTURE Catalysis for energy storage Robert Schlögl, Fritz-Haber-Institute of the Max Planck Society, Berlin/D					A/4
09:45 - 10:15	COFFEE BREAK					
10:15 - 11:15	PLENARY LECTURE Materials challenges for the energy technology revolution: expanding the role of nuclear power and developing inertial fusion energy Tomas Diaz de la Rubia, Lawrence Livermore National Laboratory, CA/USA					A/5
11:15 - 12:15	PLENARY LECTURE Non-conventional solutions for the protection of materials at high temperatures Michael Schütze, DECHEMA e.V., Frankfurt am Main/D					A/6
12:15 - 12:30	Poster Prize Awards					
12:30 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment					
Room:	Johann-Peter-Hebel-Saal Level -1	Hans-Thoma-Saal Level -1	Clubraum Level 0	Viktor-von-Scheffel-Saal Level -1	Alfred-Mombert-Saal Level -1	
	Materials for Large Power Plants	Materials for Renewable Energy Conversion	Thermoelectrics: from Highly Efficient Structures to High-Temperature Generators	Hydrogen Storage	Catalysts for Sustainable Energy Applications	
Chairs:	D. Féron	C. Jooss & D. Cahen	Y. Gelbstein & K. Nielsch	B. Dam	M.-I. Baraton & A. Bell	
14:00 - 14:20	V. Borodin A/215	R. Beranek A/370	N. Stein A/505	S. Luzan B/733	KEYNOTE K. Seshan B/876	
14:20 - 14:40	J. Hohe A/218	G.P. Demopoulos A/372	D. Singh A/506	M. Schlichtenmayer B/736		
14:40 - 15:00	N. Holstein A/221	Joint Panel Discussion „New strategies for maximum light harvesting“	M. Soulier A/507	C. Matei Ghimbeu B/739	L. Wang B/877	
15:00 - 15:20	M. Rieth A/224		KEYNOTE J. Nurnus A/512	W. Lohstroh B/742	N. Mezentseva B/879	
15:20 - 15:40	A. Weisenburger A/227		N. Brun B/745	M. Friedrich B/882		
15:40 - 16:10	COFFEE BREAK					
	Materials for Large Power Plants	Materials for Renewable Energy Conversion	Thermoelectrics: from Highly Efficient Structures to High-Temperature Generators	Electrochemical Energy Storage: Batteries and Supercapacitors	Catalysts for Sustainable Energy Applications	
Chairs:	N. Bagcivan & F.J. Pérez-Trujillo	G. Flamant & D. Ginley	Y. Gelbstein & K. Nielsch	K.-C. Möller & M. Winter	M.-I. Baraton & A. Bell	
16:10 - 16:30	KEYNOTE B. Gleeson A/230	KEYNOTE T. Mayer A/375	Q. Yan A/513	X.Y. Peng B/557	A. Pitois B/884	
16:30 - 16:50			S. Ezhilvalavan A/515	F. Huang B/560	L. Kapokova B/887	
16:50 - 17:10	B. Yildirim A/233	M.F. Toney A/378	P. Zahn A/519	N. Brun B/562	A. Erdohelyi B/890	
17:10 - 17:30	E. Godlewski A/236	B. Schmidt-Hansberg A/380	D. Osborne A/520	KEYNOTE S. Passerini B/565	S.A. Kuznetsov B/893	
17:30 - 17:50	S. Oberhauser A/239				P. Pfeifer B/895	
17:50 - 20:00	POSTER SESSION 2 Authors of posters are expected to be available at their poster during the Poster Session 2					
20:00 - 24:00	CONFERENCE DINNER					

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Thursday, July 8, 2010

Room:	Johann-Peter-Hebel-Saal Level -1	Hans-Thoma-Saal Level -1	Clubraum Level 0	Viktor-von-Scheffel-Saal Level -1	Alfred-Mombert-Saal Level -1
	Materials for Large Power Plants	Materials for Renewable Energy Conversion	Thermoelectrics: from Highly Efficient Structures to High-Temperature Generators	Electrochemical Energy Storage: Batteries and Supercapacitors	Catalysts for Sustainable Energy Applications
Chairs:	N. Bagcivan & F.J. Pérez-Trujillo	G. Flamant & D. Ginley	J. Nurnus & M.-C. Record	K.-C. Möller & M. Winter	J. Ye
09:00 - 09:20	KEYNOTE A. Agüero A/242	KEYNOTE D. Cahen A/381	KEYNOTE Y. Gelbstein A/522	F.I. Allen B/568	M.V. Martinez-Huerta B/898
09:20 - 09:40				C. Ziebert B/570	A. Bhattacharyya B/901
09:40 - 10:00	T. Hüttel A/245	T. Mayer A/384	M. Bardoux A/523	W. Jaegermann B/573	N. Yagihashi B/904
10:00 - 10:20	M. Juez-Lorenzo A/247	C. Jooss A/387	M.D. Maciá A/526	S. Bouazza B/576	KEYNOTE C. Bianchini B/907
10:20 - 10:40	F.J. Pérez-Trujillo A/250	P. Wahnón A/389	H. Böttner A/529	T.J.S. Schubert B/577	
10:40 - 11:10	COFFEE BREAK				
	Nanostructures for Energy Applications	Materials for Renewable Energy Conversion	Materials for Energy Storage	Electrochemical Energy Storage: Batteries and Supercapacitors	Materials Research for Solid-State Lighting
Chairs:	P.M. Ajayan & S.R.P. Silva	G. Flamant & D. Ginley	R. Tammé	K.-C. Möller & M. Winter	E. Keßenich & J. Phillips
11:10 - 11:30	O. Gutfleisch B/1041	T. Hanrath A/392	J. Meinert B/779	KEYNOTE J. Tübke B/578	KEYNOTE T. Riedl B/975
11:30 - 11:50	131 M. Noe B/1042	E. Brandau A/393	A. Chalbi B/782	N. Hüsing B/581	M. Kröger B/976
11:50 - 12:10	G. Fuldner B/1045	J. Moghal A/396	L. Huang B/785	B. Schmitz B/582	A. Fuchs B/977
12:10 - 12:30	KEYNOTE K. Gschneidner, Jr. B/1048	M. Elbahri A/400	T. Bauer B/787	R. Moenig B/583	D.S. Setz B/980
12:30 - 12:50		A. Fuchs A/401	R. Herrmann B/790		
12:50 - 14:00	Lunch Break - Lunch will be available at the conference venue for self-payment				
	Nanostructures for Energy Applications	Materials for Renewable Energy Conversion	Materials for Energy Storage	Electrochemical Energy Storage: Batteries and Supercapacitors	Materials Research for Solid-State Lighting
Chairs:	P.M. Ajayan & S.R.P. Silva	G. Flamant & D. Ginley	B. Baretzky & D. Shchukin	K.-C. Möller & M. Winter	E. Keßenich & J. Phillips
14:00 - 14:20	T. Hofmann B/1050	KEYNOTE J.D. Perkins A/404	KEYNOTE T.C. Monson B/793	N. Sharma B/584	KEYNOTE A. Mascarenhas B/983
14:20 - 14:40	J. Emah B/1051			R. Prakash B/587	
14:40 - 15:00	A. Pohl B/1054	K. Ellmer A/405	U. Klein B/794	A. Latz B/590	G.T. Wang B/985
15:00 - 15:20	E. Vanhaecke B/1055	D. Meissner A/408	G. Munz B/795	T. Chrobak B/593	U. Rossow B/987
15:20 - 15:40	M.L. Ponce B/1057	Z.G. Zou A/409	D. Shchukin B/798	W.G. Bessler B/596	K. Müller-Buschbaum B/988
15:40 - 16:00	A. Ansón B/1058	J. Schaffner A/410	C. Feldmann B/799	A. Orphanou B/597	O. Diwald B/989
16:00 - 17:00	FAREWELL				

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PLENARY LECTURES**Monday, July 5, 2010****John L. Sarrao**, Los Alamos National Laboratory, NM/USA**Controlling the functionality of materials for sustainable energy****Alfred Voß**, University of Stuttgart, Institut für Energiewirtschaft und Rationelle Energieanwendung/D**Energy technology perspectives for a sustainable energy provision****Wednesday, July 7, 2010****Robert Schlögl**, Fritz-Haber-Institute of the Max Planck Society, Berlin/D**Catalysis for energy storage****Tomas Diaz de la Rubia**, Lawrence Livermore National Laboratory, CA/USA**Materials challenges for the energy technology revolution: expanding the role of nuclear power and developing inertial fusion energy****Michael Schütze**, DECHEMA e.V., Karl-Winnacker-Institut, Frankfurt am Main/D**Non-conventional solutions for the protection of materials at high temperatures****WORKSHOP FOR GRADUATE STUDENTS****Functional nanostructures applied in energy storage and energy conversion systems**

Tuesday, July 6, 2010 from 13:30 – 18:00 and Wednesday, July 7, 2010 from 08:30 – 13:00

The Center for Functional Nanostructures (CFN) of the Karlsruhe Institute of Technology (KIT) organizes a workshop on „Functional nanostructures applied in energy storage and energy conversion systems“ for graduate students. The detailed programme can be found on the internet.

Attendance of the workshop is free for registered participants of this conference and for graduate students working on projects financed by the CFN. A separate registration is necessary.

SOCIALS – WELCOME RECEPTION / CONFERENCE DINNER / FAREWELL

The **Welcome Reception** takes place on **Sunday, July 4 from 18:00 – 20:00** to welcome all participants for a welcome drink and snack.

The **Conference Dinner** takes place on **Wednesday, July 7, 2010 from 20:00 – 24:00** at the Gartenhalle of the conference venue. Registration is necessary, costs EUR 35 incl. VAT.

The **Farewell** takes place on **Thursday, July 8, 2010 from 16:00 – 17:00** to say goodbye by a glass of beer or wine.

10:00 - 18:00 **Assembly of Exhibition**18:00 - 20:00 **REGISTRATION AND WELCOME RECEPTION**

	Book/Page	
08:00 - 09:30	Registration & Coffee	
ROOM:	Friedrich-Weinbrenner-Saal – Level 0	
09:30 - 10:00	OPENING CEREMONY E. Umbach, President of the Karlsruhe Institute of Technology (KIT)/D A.J. Hurd, Los Alamos National Laboratory, NM/USA A. Förster, DEHEMA e.V., Frankfurt am Main/D	
10:00 - 11:00	PLENARY LECTURE Controlling the functionality of materials for sustainable energy J. Sarrao, Los Alamos National Laboratory, NM/USA	A/2
11:00 - 11:30	COFFEE BREAK	
11:30 - 12:30	PLENARY LECTURE Energy technology perspectives for a sustainable energy provision A. Voß, University of Stuttgart/D	A/3
12:30 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
ROOM:	Johann-Peter-Hebel-Saal – Level -1	
	MATERIALS FOR LARGE POWER PLANTS	
Chair:	W.G. Sloof, Delft University of Technology/NL	
14:00 - 14:40	KEYNOTE LECTURE The max phases: ductile, machinable ternary carbides and nitrides for high temperature and other energy related applications M.W. Barsoum, Drexel University, Philadelphia, PA/USA	A/157
14:40 - 15:00	Recent progress in the qualification of materials used in geothermal energy conversion systems H. Sarmiento Klapper, R. Bäßler, A. Burkert, Federal Institute for Material Research and Testing (BAM), Berlin/D	A/158
15:00 - 15:20	Stabilizing nanoparticles for high-temperature reactive applications G. Vesper, National Energy Technology Laboratory and University of Pittsburgh, PA/USA	A/160
15:20 - 15:40	High temperature protective coatings with sensor function K. Aleksandrov, M. Schütze, DEHEMA e.V., Frankfurt am Main/D; I. Teliban, E. Quandt, CAU Kiel/D	A/161
15:40 - 16:10	COFFEE BREAK	
16:10 - 16:30	Repeatable crack healing of Ti₂AlC ceramic in high temperature applications for energy generation S.B. Li, G.M. Song, W.G. Sloof, S. van der Zwaag, Delft University of Technology/NL; Y.T. Pei, J.Th.M. de Hosson, University of Groningen/NL	A/164
16:30 - 16:50	Mullite based thermal and environmental barrier coating for SiC/SiC ceramic matrix composites D. Jong, S. van der Zwaag, C. Kwakernaak, W.G. Sloof, Delft University of Technology/NL	A/165
16:50 - 17:10	The effect of H₂/H₂O ratio on thermally grown chromia scales formed on Ni₃Cr(Mn) alloys in Ar-H₂-H₂O atmospheres at 1000°C L. Garcia-Fresnillo, M. Hänsel, V. Shemet, L. Singheiser, W.J. Quadackers, Forschungszentrum Jülich GmbH/D	A/166
17:10 - 17:30	Oxidation protection coatings for graphite articles and molybdenum microstructured reactor S.A. Kuznetsov, Kola Science Centre RAS, Apatity/RUS	A/169
17:30 - 17:50	Oxidation of a nickel ferrite based cermet at high temperature C. Honvault, V. Peres, M. Pijolat, Ecole Nationale Supérieure des Mines de Saint Etienne/F; P. Palau, Centre de Recherche de Voreppe/F	A/171
17:50 - 20:00	POSTER SESSION 1 – Authors of posters are expected to be available on their poster during the Poster Session 1	

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ROOM:	Friedrich-Weinbrenner-Saal – Level 0	
09:30 - 10:00	OPENING CEREMONY E. Umbach, President of the Karlsruhe Institute of Technology (KIT)/D A.J. Hurd, Los Alamos National Laboratory, NM/USA A. Förster, DEHEMA e.V., Frankfurt am Main/D	
10:00 - 11:00	PLENARY LECTURE Controlling the functionality of materials for sustainable energy J. Sarrao, Los Alamos National Laboratory, NM/USA	A/2
11:00 - 11:30	COFFEE BREAK	
11:30 - 12:30	PLENARY LECTURE Energy technology perspectives for a sustainable energy provision A. Voß, University of Stuttgart/D	A/3
12:30 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
ROOM:	Hans-Thoma-Saal – Level -1	
	MATERIALS FOR FUELS CELLS – SOFC (in parallel with PEMFC)	
CHAIR:	W.J. Quadackers, Forschungszentrum Jülich GmbH/D	
14:00 - 14:20	Perovskites for energy applications – from cathode material for fuel cells to a gas separation membrane W.A. Meulenbergh, Forschungszentrum Jülich GmbH/D; J.M. Serra, Instituto de Tecnología Química (UPV-CSIC), Valencia/E; S. Baumann, M. Betz, Forschungszentrum Jülich GmbH/D; V.B. Vert, Instituto de Tecnología Química (UPV-CSIC), Valencia/E; H.P. Buchkremer, D. Stöver, Forschungszentrum Jülich GmbH/D	A/39
14:20 - 14:40	3D reconstruction of porous electrodes and microstructure modelling J. Joos, B. Rüger, A. Weber, Karlsruhe Institute of Technology (KIT)/D; T. Carraro, University of Heidelberg/D; E. Ivers-Tiffée, Karlsruhe Institute of Technology (KIT)/D	A/42
14:40 - 15:00	Structural features and transport properties of La(Sr)Fe_{1-x}Ni_xO_{3-δ} - Ce_{0.8}Gd_{0.1}O_{2-δ} nanocomposites – advanced materials for IT SOFC cathodes V. Zarubina, S. Pavlova, T. Kharlamova, V. Sadykov, T. Krieger, G. Alikina, A. Ishchenko, V. Kriventsov, V. Rogov, V. Belyaev, Borekov Institute of Catalysis, Novosibirsk/RUS; N. Uvarov, Institute of Solid State Chemistry and Mechanochemistry of SB RAS, Novosibirsk/RUS	A/45
15:00 - 15:20	Thermal stability of mixed ionic-electronic conducting Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O_{3-δ} C. Niedrig, S. Taufall, S.F. Wagner, P. Müller, H. Störmer, D. Gerthsen, E. Ivers-Tiffée, Karlsruhe Institute of Technology (KIT)/D	A/48
15:20 - 15:40	Ultrathin gas separation membranes I.W.M. Brown, J.P. Wu, G. Smith, Industrial Research Limited (IRL), Lower Hutt/NZ	A/51
15:40 - 16:10	COFFEE BREAK	
CHAIR:	A. Weber, Karlsruhe Institute of Technology (KIT)/D	
16:10 - 16:30	Processing of SOFC materials by colloidal field-assisted shaping of ceramic nanopowders: needs and prospects G. Falk, Saarland University, Saarbruecken/D	A/54
16:30 - 16:50	Materials and components for metal-supported SOFCs T. Franco, M. Rüttinger, A. Venskutonis, L.S. Sigl, PLANSEE SE, Reutte/A	A/57
16:50 - 17:10	Effect of gas composition on the corrosion behaviour of metallic materials for thin-walled high temperature heat exchangers in SOFC systems P. Huczowski, Forschungszentrum Jülich GmbH/D; H.-H. Angermann, BEHR GmbH Co. KG, Stuttgart/D; V. Haanappel, L.G.J. de Haart, L. Singheiser, W.J. Quadackers, Forschungszentrum Jülich GmbH/D	A/60
17:10 - 17:50	KEYNOTE LECTURE Experience with SOFC stacks N. Christiansen, Topsoe Fuel Cell A/S, Lyngby/DK	A/61
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10:00 - 11:00	PLENARY LECTURE Controlling the functionality of materials for sustainable energy J. Sarrao, Los Alamos National Laboratory, NM/USA	A/2
11:00 - 11:30	COFFEE BREAK	
11:30 - 12:30	PLENARY LECTURE Energy technology perspectives for a sustainable energy provision A. Voß, University of Stuttgart/D	A/3
12:30 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
ROOM:	Clubraum – Level o	
	MATERIALS FOR FUELS CELLS – PEMFC (in parallel with SOFC)	
Chair:	E. Ivers-Tiffée, Karlsruhe Institute of Technology (KIT)/D	
14:00 - 14:20	Electrochemical behaviour of denatured ethanol for use in direct ethanol fuel cells D. Bayer, B. Kintzel, M. Joos, C. Cremers, J. Tübke, Fhl for Chemical Technology ICT, Pfintzal/D	A/11
14:20 - 14:40	Poly(diphenylsulfone-oxadiazole)s for proton exchange membrane fuel cells M. Schieda, R. Just, GKSS Research Centre Geesthacht GmbH/D; S. Nunes, King Abdullah University of Science and Technology, Thuwal/SAR	A/14
14:40 - 15:00	Effect of different surface treatments on the stability of stainless steels for use as bipolar plates in low and high temperature proton exchange membrane fuel cells J. Richards, K. Schmidt, Fhl for Chemical Technology ICT, Wolfsburg/D; J. Tübke, C. Cremers, Fhl for Chemical Technology ICT, Pfintzal/D	A/15
15:00 - 15:40	KEYNOTE LECTURE Overview on polymer membranes for automotive applications D. Stolten, J. Mergel, C. Wannek, Forschungszentrum Jülich GmbH/D	A/18
15:40 - 16:10	COFFEE BREAK	
Chair:	D. Stolten, Forschungszentrum Jülich GmbH/D	
16:10 - 16:30	Modified ordered mesoporous silica materials with high proton conductivity for fuel cell application M. Sharifi, R. Marschall, University of Hanover/D; D. Wallacher, BENSC at Helmholtz-Center Berlin for Materials and Energy/D; M. Wark, University of Hanover/D	A/19
16:30 - 16:50	X-ray computed tomography of PEM fuel cells A. Pfrang, D. Veyret, G. Tsotridis, Joint Research Centre of the European Commission, Petten/NL; G. Janssen, Energy Research Centre of the Netherlands ECN, Petten/NL	A/20
16:50 - 17:10	Elementary kinetic models for understanding fuel cell materials W.G. Bessler, German Aerospace Center (DLR), Stuttgart/D	A/23
17:10 - 17:30	Pt based electrocatalysts for PEM fuel cells: from model systems to applied catalysts M. Arenz, University of Copenhagen/DK	A/24
17:30 - 17:50	Electrochemical properties of Co₂/Pt(111) model catalyst surfaces T. Wadayama, N. Todoroki, H. Yoshida, Y. Yamada, Tohoku University, Sendai/J	A/27
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08:00 - 09:30	Registration & Coffee	
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09:30 - 10:00	OPENING CEREMONY E. Umbach, President of the Karlsruhe Institute of Technology (KIT)/D A.J. Hurd, Los Alamos National Laboratory, NM/USA A. Förster, DEHEMA e.V., Frankfurt am Main/D	
10:00 - 11:00	PLENARY LECTURE Controlling the functionality of materials for sustainable energy J. Sarrao, Los Alamos National Laboratory, NM/USA	A/2
11:00 - 11:30	COFFEE BREAK	
11:30 - 12:30	PLENARY LECTURE Energy technology perspectives for a sustainable energy provision A. Voß, University of Stuttgart/D	A/3
12:30 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
ROOM:	Viktor-von-Scheffel-Saal – Level -1	
	HYDROGEN STORAGE	
Chair:	M. Fichtner, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	
14:00 - 14:20	New complex hydrides C. Weidenthaler, A. Pommerin, A. Wosylus, M. Felderhoff, F. Schüth, MPI für Kohlenforschung, Mülheim/D	B/669
14:20 - 14:40	Synthesis and characterization of novel double-cation borohydrides C. Frommen, N. Aliouane, S. Deledda, J.E. Fonnelløp, H. Grove, I. Llamas-Jansa, K. Lieutenant, S. Sartori, H. Østby, M.H. Sørby, B.C. Hauback, Institute for Energy Technology, Kjeller/N	B/670
14:40 - 15:00	Physical mixtures of metal borohydrides as hydrogen storage materials E.G. Bardají, W. Lohstroh, N. Boucharat, E. Röhm, M. Fichtner, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/673
15:00 - 15:20	A study of lithium-aluminum-borohydride I. Lindemann, R. Domènech Ferrer, IFW Dresden/D; Y. Filinchuk, Swiss-Norwegian Beam Lines at ESRF, Grenoble/F; R. Cerny, H. Hagemann, University of Geneva/CH; L. Schultz, O. Gutfleisch, IFW Dresden/D	B/676
15:20 - 15:40	Reaction mechanism and kinetics of MgH₂/borohydride based reactive hydride composites K. Taube, M. Dornheim, GKSS Forschungszentrum Geesthacht GmbH/D	B/677
15:40 - 16:10	COFFEE BREAK	
Chair:	A. Züttel, EMPA, Duebendorf/CH	
16:10 - 16:50	KEYNOTE LECTURE Borohydrides, aluminoboranes and boron-cage compounds for hydrogen storage J.C. Zhao, X. Chen, T. Yisgedu, Z. Huang, H.K. Lingam, B. Billet, S.G. Shore, The Ohio State University, Columbus, OH/USA	B/678
16:50 - 17:10	In-situ neutron diffraction study of magnesium amide/lithium hydride hydrogen storage mixtures F. Dolci, E. Weidner, JRC Institute for Energy of the European Commission, Petten/NL; M. Hoelzel, Forschungs-Neutronenquelle Heinz Maier-Leibnitz, Garching/D; T. Hansen, Institute Laue Langevin, Grenoble/F; M. Fichtner, W. Lohstroh, Karlsruhe Institute of Technology (KIT)/D	B/680
17:10 - 17:30	Computational approaches to complex hydride decomposition: from thermodynamics to kinetics M.J. van Setten, W. Lohstroh, M. Fichtner, Karlsruhe Institute of Technology (KIT)/D	B/683
17:30 - 17:50	Hydrogenography: tuning the hydrogen absorption properties of metal hydrides at the nano-scale B. Dam, A. Baldi, Y. Pivak, L. Mooij, S.W.H. Eijt, Delft University of Technology/NL; P.E. De Jongh, Utrecht University/NL	B/686
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09:30 - 10:00	OPENING CEREMONY E. Umbach, President of the Karlsruhe Institute of Technology (KIT)/D A.J. Hurd, Los Alamos National Laboratory, NM/USA A. Förster, DECEMA e.V., Frankfurt am Main/D	
10:00 - 11:00	PLENARY LECTURE Controlling the functionality of materials for sustainable energy J. Sarrao, Los Alamos National Laboratory, NM/USA	A/2
11:00 - 11:30	COFFEE BREAK	
11:30 - 12:30	PLENARY LECTURE Energy technology perspectives for a sustainable energy provision A. Voß, University of Stuttgart/D	A/3
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ROOM:	Alfred-Mombert-Saal – Level -1	
	LIGHT-WEIGHT STRATEGIES, CONCEPTS, DESIGN, MATERIALS, PROCESSES AND METHODS	
Chair:	F. Henning, Fhl for Chemical Technology ICT, Pfinztal/D & Karlsruhe Institute of Technology (KIT)/D	
14:00 - 14:20	Hybrid beams for light weight structures O. Deisser, M. Kriescher, DLR-FK, Stuttgart/D; M. Holzapfel, DLR-BK, Stuttgart/D; O. Rüger, IFB, Stuttgart/D; R. Chaudhari, F. Henning, Fhl for Chemical Technology ICT, Pfinztal/D; M. Grigo, K. Weidenmann, Karlsruhe Institute of Technology (KIT)/D; J. Roettger, Dow Chemical Company, Schwalbach/D	B/935
14:20 - 14:40	Development of a magnesium front end for an automobile A. Luo, General Motors Company, Detroit, MI/USA; E. Nyberg, Pacific Northwest National Laboratory, Richland, WA/USA; K. Sadayappan, Natural Resources Canada, Ottawa/CDN; W. Shi, China Magnesium Corporation, Beijing/PRC	B/937
14:40 - 15:00	Reactive injection moulding – a new and efficient process for the production of high performance composite parts L.F. Berg, Fhl for Chemical Technology ICT, Pfinztal/D; P. Elsner, F. Henning, B. Thoma, Pfinztal and Karlsruhe Institute of Technology (KIT)/D; S. Pfister, Fhl for Chemical Technology ICT, Pfinztal/D	B/940
15:00 - 15:20	Polyurethane composites based sandwich structures for light weight applications J. Kuppinger, F. Wafzig, F. Henning, Fhl for Chemical Technology ICT, Pfinztal/D; S. Dietrich, K. Weidenmann, P. Elsner, Karlsruhe Institute of Technology (KIT)/D; G. Kopp, DLR-Institute of Vehicle Concepts, Stuttgart/D; M. Grzeschik, Institute for Aircraft Design, Stuttgart/D	B/943
15:20 - 15:40	Joining technologies A. Piller, M. Kriescher, L. Haeberle, M. Holzapfel, German Aerospace Center (DLR), Stuttgart/D; F. Henning, M. Reif, Fhl for Chemical Technology ICT, Pfinztal/D; M. Grigo, K. Weidenmann, Karlsruhe Institut of Technology (KIT)/D	B/946
15:40 - 16:10	COFFEE BREAK	
16:10 - 16:30	Processing of engineering thermoplastics using LFT-D/ILC technology for structural automotive applications R. Chaudhari, M. Reif, A. Diehl, O. Gieger, F. Henning, A. Terenzi, Fhl for Chemical Technology ICT, Pfinztal/D	B/949
16:30 - 16:50	Textile materials for efficient energy conversion and storage T. Gries, T. Holtermann, RWTH Aachen University/D	B/952
16:50 - 17:10	Nanostructuring as a strategy for reducing specific weight of metals M. Lewandowska, K.J. Kurzydowski, Warsaw University of Technology/PL	B/954
17:10 - 17:30	Thin film coatings for energy saving automobile and building Y. Taga, Chubu University, Kasugai, Aichi/J	B/957
17:30 - 17:50	Strategies for numerical prediction of the uncertainty in the material response of solid foams J. Hohe, C. Beckmann, Fhl for Mechanics of Materials IWM, Freiburg/D	B/960
17:50 - 20:00	POSTER SESSION 1 – Authors of posters are expected to be available on their poster during the Poster Session 1	

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	MATERIALS FOR LARGE POWER PLANTS	
Chairs:	E. Roos, University of Stuttgart/D & L. Singheiser, Forschungszentrum Jülich GmbH/D	
09:00 - 09:20	Materials qualification and assessment for components of advanced fossil high efficiency power plants K. Schmidt, E. Roos, University of Stuttgart/D	A/174
09:20 - 09:40	PEO cross-linked hydrogels as a new material for CO₂-selective polymeric membranes in CCS technologies J.R. Pauls, GKSS Research Centre Geesthacht GmbH/D; K.V. Peinemann, King Abdullah University of Science and Technology, Thuwal/SAR	A/177
09:40 - 10:00	Evaluation of base material and welded joints designated for membrane walls and on superheater components made from new generation martensitic creep-resisting steels for supercritical parameters J. Dobrzanski, Institute for Ferrous Metalurgy, Gliwice/PL; J. Pasternak, Boiler Engineering Company RAFAKO SA, Racibórz/PL; A. Zielinski, Institute for Ferrous Metalurgy, Gliwice/PL	A/179
10:00 - 10:40	KEYNOTE LECTURE Advanced boiler materials for ultra supercritical fossil fuel-fired power plants Q. Wu, ON Semiconductor, Phoenix, AZ/USA; H. Song, University of Cincinnati, OH/USA; J.P. Shingledecker, EPRI, Charlotte, NC/USA; V.K. Vasudevan, University of Cincinnati, OH/USA	A/180
10:40 - 11:10	COFFEE BREAK	
11:10 - 11:30	Microstructural evolution and hardening in IN740 superalloy Q. Wu, ON Semiconductor, Phoenix, AZ/USA; H. Song, University of Cincinnati, OH/USA; J.P. Shingledecker, EPRI, Charlotte, NC/USA; V.K. Vasudevan, University of Cincinnati, OH/USA	A/181
11:30 - 11:50	Comparison between the multiaxial generalisation of a creep law to an uniaxial implementation R. Pillai, K. Lucka, H. Köhne, Oel Waerme Institut gGmbH, Aachen/D	A/182
11:50 - 12:10	Nanostructuring of Ti-alloys by SPD for structural application in engineering I.P. Semenova, V.V. Polyakova, I.V. Skryabin, R.Z. Valiev, Ufa State Aviation Technical University/RUS	A/185
12:10 - 12:30	Oxidation of heat exchanger alloys in steam at 550 - 700°C T. Dudziak, N.J. Simms, M. Lukaszewicz, S.J. Mabbutt, J.E. Oakey, Cranfield University/UK	A/188
12:30 - 12:50	Innovative coupled analytic methods to characterize materials for carbon capture and sequestration E. Wirth, R. André, P. Le Parlouër, Setaram Instrumentation, Caluire/F; A. Levchenko, Setaram Inc., Newark, CA/USA	A/191
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
Chair:	D. Féron, CEA, Gif-sur-Yvette/F	
14:00 - 14:20	Structural and cladding materials development and characterisation for innovative nuclear waste transmutation systems C. Fazio, M. Rieth, R. Lindau, J. Aktaa, H.-C. Schneider, J. Konys, M. Yurechko, G. Müller, A. Weisenburger, J.U. Knebel, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	A/193
14:20 - 14:40	Modeling of helium bubble formation and growth in RAFM steels under neutron irradiation C. Dethloff, E. Gaganidze, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; V. Svetukhin, M. Tikhonchev, Ulyanovsk State University/RUS; O. Weiss, J. Aktaa, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	A/196
14:40 - 15:00	From low activation steels to iron based nano-scaled superalloys: the nuclear energy perspective A. Moeslang, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; A. Kimura, Kyoto University/J	A/199
15:00 - 15:20	Studies of new fission and fusion reactor materials on the nanometre scale by 3-D atom probe and TEM analysis E.A. Marquis, S. Humphry-Baker, G.D.W. Smith, C.A. Williams, University of Oxford/UK	A/200
15:20 - 15:40	Irradiation effects in FeCrAl ODS alloys C.-L. Chen, I-Shou University, Kaohsiung/RC; A. Richter, University of Applied Sciences Wildau (Berlin)/D; G. Talut, Research Center Dresden-Rossendorf FZD/D	A/202
15:40 - 16:10	COFFEE BREAK	
16:10 - 16:50	KEYNOTE LECTURE Radiation resistant materials through dynamic self-organization and compositional patterning at the nanoscale P. Bellon, N. Vo, B. Stumphy, R.S. Averback, University of Illinois, Urbana, IL/USA	A/205
16:50 - 17:10	Dissimilar welds of nuclear standard and ODS steels V. Widak, B. Dafferner, M. Rieth, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	A/208
17:10 - 17:30	Long-term high temperature thermal stability of an ODS RAF steel after high speed hydrostatic extrusion Z. Oksiuta, Bialystok Technical University/PL; M. Lewandowska, K.J. Kurzydowski, Warsaw University of Technology/PL; N. Baluc, EPFL-CRPP, Villigen/CH	A/211
17:30 - 17:50	Creep behavior of high temperature alloys for generation IV nuclear energy applications X. Wen, University of Cincinnati, OH/USA; L.J. Carroll, R. Wright, Idaho National Laboratory, Idaho Falls, ID/USA; T. Sham, Oak Ridge National Laboratory, TN/USA; V.K. Vasudevan, University of Cincinnati, OH/USA	A/214

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	MATERIALS FOR RENEWABLE ENERGY CONVERSION	
Chairs:	<i>E. Dinjus, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D & F. Ropital, IFP, Vernaison/F</i>	
09:00 - 09:20	Hydrogenolysis - a versatile route for future bio-refinery concepts R. Palkovits, K. Tajvidi, A. Ruppert, J. Procelewska, MPI for Coal Research, Muelheim an der Ruhr/D	A/323
09:20 - 09:40	Hydrothermal carbonization of biomass: a route to meaningful nanostructured carbonaceous materials M.M. Titirici, R. White, R. Demir-Cakan, L. Zhao, S. Kubo, J. Popovic, MPI of Colloids and Interfaces, Potsdam/D	A/326
09:40 - 10:00	Hydrothermal carbonization - investigation of process parameters J. Steinbrück, M. Roßbach, D. Reichert, Karlsruhe Institute of Technology (KIT)/D; L. Walz, Energie Baden-Wuerttemberg AG, Karlsruhe/D; D. Eyler, European Institute for Energy Research, Karlsruhe/D; H. Bockhorn, Karlsruhe Institute of Technology (KIT)/D	A/329
10:00 - 10:20	Low-temperature catalytic pyrolysis - effective way of both biomass and polymeric wastes conversion E. Sulman, M. Sulman, Yu. Kosivtsov, Yu. Lugovoy, V. Alforyov, Tver Technical University/RUS; N. Kumar, D. Murzin, Åbo Akademi University, Turku/FIN	A/332
10:20 - 10:40	New nanostructured catalysts for biomass' products conversion into fuel compounds M.V. Tsodikov, A.V. Chistyakov, F.A. Yandieva, V.Ya. Kugel, Topchiev Institute of Petrochemical Synthesis RAS, Moscow/RUS; A.E. Gekhman, I.I. Moiseev, Kurnakov Institute of General and Inorganic Chemistry RAS, Moscow/RUS	A/335
10:40 - 11:10	COFFEE BREAK	
11:10 - 11:30	Catalytic valorization of bioethanol to biobutanol T. Riittonen, Åbo Akademi University, Turku/FIN; J.-P. Mikkola, Åbo Akademi University, Turku and Umeå University/FIN	A/338
11:30 - 11:50	Ionic liquid - key materials in biomass conversion? T.J.S. Schubert, IoLiTec Ionic Liquids Technologies GmbH, Denzlingen/D; S. Sauer, IoLiTec Ionic Liquids Technologies GmbH, Heilbronn/D	A/341
11:50 - 12:10	Porous membrane catalytic systems for conversion of biomass products into hydrogen-containing gas and syngas V.V. Zhmakin, M.V. Tsodikov, V.V. Teplyakov, A.V. Topchiev Institute of Petrochemical Synthesis RAS, Moscow/RUS; V.I. Uvarov, Institute of Structural Macrokinetics and Materials Science RAS, Chernogolovka/RUS	A/343
12:10 - 12:30	Corrosion of refractory alloys induced by sodium sulphate in simulated low oxygen potential atmospheres of the BTL plants L. Couture, A. Galerie, Y. Wouters, University of Grenoble, Saint Martin d'Hères/F; F. Grosjean, J. Kittel, F. Ropital, IFP, Solaize/F	A/346
12:30 - 12:50	Challenges of selecting materials for the process of biomass gasification in supercritical water N. Boukis, W. Habicht, E. Hauer, E. Dinjus, Karlsruhe Institute of Technology (KIT)/D	A/348
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
Chair:	<i>C. Jooss, University of Göttingen/D</i>	
14:00 - 14:20	Functional interfaces in oxide nanoparticle networks: recombination versus separation of photogenerated charges N. Siedl, M.J. Elser, J. Bernardi, Vienna University of Technology/A; O. Diwald, University of Erlangen-Nuremberg/D	A/351
14:20 - 14:40	Ruthenium sulphide layers and nanoparticles as efficient catalyst for water oxidation C. Zachaeus, S. Brunken, A. Kratzig, I. Dorbandt, G. Zehl, K. Ellmer, P. Bogdanoff, S. Fiechter, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH/D	A/352
14:40 - 15:00	A n-Si/n-Fe₂O₃ tandem photoanode for solar water splitting Y.Q. Liang, R. van de Krol, Delft University of Technology/NL	A/353
15:00 - 15:40	KEYNOTE LECTURE Overall water splitting on heterogeneous photocatalysts under visible light K. Domen, University of Tokyo/J	A/356
15:40 - 16:10	COFFEE BREAK	
16:10 - 16:50	KEYNOTE LECTURE Kinetics of CO₂ and H₂O splitting by mixed-metal ferrites: an experimental and computational investigation M.D. Allendorf, G.H. Evans, B.W. Jacobs, A.H. McDaniel, Sandia National Laboratories, Livermore, CA/USA; J.E. Miller, Sandia National Laboratories, Albuquerque, NM/USA; J. Scheffe, A.W. Weimer, University of Colorado, Boulder, CO/USA	A/357
16:50 - 17:10	Alpha-Fe₂O₃ electrodes for photoelectrochemical hydrogen generation U. Wijayantha, A.A. Tahir, S. Saremi, Loughborough University/UK	A/360
17:10 - 17:30	CO₂ photo-catalytic conversion for renewable energy Q.-H. Zhang, W.-D. Han, Y.-J. Hong, J.-G. Yu, East China University of Science and Technology, Shanghai/PRC	A/361
17:30 - 17:50	Ab-initio modeling of water-semiconductor interfaces for direct solar-to-chemical energy conversion B.C. Wood, T. Ogitsu, E. Schwegler, Lawrence Livermore National Laboratory, CA/USA	A/368

ROOM:	Clubraum – Level o	Book/Page
	MATERIALS FOR FUELS CELLS – PEMFC	
Chair:	<i>W.G. Bessler, German Aerospace Center (DLR), Stuttgart/D</i>	
09:00 - 09:20	Virtual material design of PEM fuel cell layers J. Becker, J. Seibt, A. Wiegmann, Fraunhofer ITWM, Kaiserslautern/D	A/30
09:20 - 09:40	Electrocatalysts for the oxygen reduction reaction based on the oxalate-supported pyrolysis of H₂TMPP U. Kramm, I. Herrmann, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH/D; I. Abs-Wurmbach, Institute of Technology Berlin/D; J. Radnik, Leibniz Institute for Catalysis, Rostock/D; P. Bogdanoff, S. Fiechter, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH/D	A/31
09:40 - 10:00	Hydrophobic carbon nanostructured layer as bi-functional gas diffusion media and catalyst support for PEM fuel cells S. Pacheco Benito, L. Lefferts, University of Twente, Enschede/NL	A/32
10:00 - 10:20	New electrocatalyst supports for high temperature PEM fuel cells (HT-PEMFC) M. Boaventura, L. Brandão, M.C. Campo, D.A. Pacheco Tanaka, A. Mendes, University of Porto/P	A/35
10:20 - 10:40	Molecular modeling of water percolation and proton transport in fuel cell membranes R. Devanathan, N. Idupulapati, M. Dupuis, Pacific Northwest National Laboratory, Richland, WA/USA	A/38
10:40 - 11:10	COFFEE BREAK	
	MATERIALS FOR FUELS CELLS – SOFC	
Chair:	<i>N. Christiansen, Topsoe Fuel Cell A/S, Lyngby/DK</i>	
11:10 - 11:50	KEYNOTE LECTURE High temperature corrosion issues in SOFC systems K.Y. Jung, N.M. Yanar, F.S. Pettit, G.H. Meier, University of Pittsburgh, PA/USA; P. Singh, University of Connecticut, CT/USA	A/62
11:50 - 12:10	Suitability of different types of high-chromium ferritic steels as construction materials for interconnects in solid oxide fuel cells L. Niewolak, B. Kuhn, C. Asensio-Jimenez, Forschungszentrum Jülich GmbH/D; H. Hattendorf, ThyssenKrupp VDM GmbH, Altena/D; L. Singheiser, W.J. Quadackers, Forschungszentrum Jülich GmbH/D	A/63
12:10 - 12:30	Investigation of phase and strain distributions from Cr poisoning inside of solid oxide fuel cell using a microfocused X-ray method D. Liu, J. Almer, T. Cruse, Argonne National Laboratory, IL/USA	A/64
12:30 - 12:50	Compatibility between AISI441 interconnect and Sr-doped lanthanum manganite electrode in solid oxide fuel/electrolyzer cells K. Lu, T. Jin, Virginia Polytechnic Institute and State University, Blacksburg, VA/USA	A/67
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
Chair:	<i>D. Gerthsen, Karlsruhe Institute of Technology (KIT)/D</i>	
14:00 - 14:40	KEYNOTE LECTURE Ceramic-based anodes for SOFCs F. Tietz, Forschungszentrum Jülich GmbH/D	A/68
14:40 - 15:00	Electrochemical characterization of Ni patterned anodes in H₂/H₂O atmosphere A. Leonide, A. Utz, H. Störmer, A. Weber, E. Ivers-Tiffée, Karlsruhe Institute of Technology (KIT)/D	A/69
15:00 - 15:20	Promotion of SOFC anode performance by finely-structured Ni/YSZ cermet prepared by heterocoagulation technique Y. Sunagawa, K. Yamamoto, A. Muramatsu, Tohoku University, Sendai/J	A/72
15:20 - 15:40	Increase of anode performance of SOFC by reverse current treatment D. Klotz, A. Leonide, E. Ivers-Tiffée, Karlsruhe Institute of Technology (KIT)/D	A/75
15:40 - 16:10	COFFEE BREAK	
Chair:	<i>F. Tietz, Forschungszentrum Jülich GmbH/D</i>	
16:10 - 16:30	Nanoparticulate cathode thin films with high electrochemical activity for low temperature SOFC A. J. Darbandi, University of Darmstadt/D; H. Hahn, Karlsruhe Institute of Technology (KIT)/D	A/78
16:30 - 16:50	Electrochemical performance of nanoscaled Lao.6Sro.4CoO₃- as intermediate temperature SOFC cathodes J. Hayd, Karlsruhe Institute of Technology (KIT)/D; U. Guntow, FhI for Silicate Research (ISC), Würzburg/D; E. Ivers-Tiffée, Karlsruhe Institute of Technology (KIT)/D	A/79
16:50 - 17:10	Characterisation of solid oxide fuel cell cathodes manufactured by traditional and novel (low cost) techniques N. Nwosu, A.M. Davidson, W. Waugh, Edinburgh Napier University/UK	A/821
17:10 - 17:30	Cation transport studies by Samarium (Sm) dopant diffusion into polycrystalline CeO₂ substrates C. Rockenhäuser, B. Butz, Karlsruhe Institute of Technology (KIT)/D; N. Schichtel, C. Korte, J. Janek, University of Gießen/D; D. Gerthsen, Karlsruhe Institute of Technology (KIT)/D	A/85
17:30 - 17:50	Cobalt doped LSGM ceramics prepared by citrate sol-gel process for IT-SOFC application I. Stijepovic, M. Kolar, University of Novi Sad/YU; A. Darbandi, TU Darmstadt/D; V.V. Srdic, University of Novi Sad/YU	A/88

ROOM:	Viktor-von-Scheffel-Saal – Level -1	Book/Page
	HYDROGEN STORAGE	
Chair:	<i>J.C. Zhao, The Ohio State University, Columbus, OH/USA</i>	
09:00 - 09:20	Hydrogen sorption kinetics, reaction dynamics, and spectroscopy A. Borgschulte, R. Gremaud, A. Züttel, Empa - Swiss Federal Laboratories for Materials Testing and Research, Dübendorf/CH; T. Ramirez-Cuesta, ISIS Facility, Didcot/UK; P. Hamm, University of Zurich/CH	B/687
09:20 - 09:40	Electrochemical synthesis of high capacity metal hydrides in the system of Li-ion extraction and insertion N. Hanada, H. Suzuki, K. Takai, Sophia University, Tokyo/J; T. Ichiwaka, Y. Kojima, Hiroshima University, Higashi Hiroshima/J	B/690
09:40 - 10:00	Simulations and experimental results of a lab-scale hydrogen storage tank based on sodium alanate (NaAlH₄) I. Utz, F. Joppich, A. Wörner, German Aerospace Center (DLR), Stuttgart/D; O. Zabara, M. Fichtner, Karlsruhe Institute of Technology (KIT)/D	B/693
10:00 - 10:20	Reversible hydrogen storage in Ti-Zr-codoped NaAlH₄ under realistic operation conditions T. Schmidt, L. Röntzsch, Fraunhofer IFAM, Dresden/D	B/696
10:20 - 10:40	Adverse reactivity effects and risk mitigation methods for candidate hydrogen storage materials Y.F. Khalil, D.A. Mosher, United Technologies Research Center, East Hartford, CT/USA; J. Cortes, C.W. James, J. Gray, D.L. Anton, Savannah River National Laboratory, Aiken, SC/USA	B/698
10:40 - 11:10	COFFEE BREAK	
Chair:	<i>M. Hirscher, MPI for Metals Research, Stuttgart/D</i>	
11:10 - 11:30	Raman spectroscopic observation of hydrogen cycling in ball-milled LiNH₂ - LiBH₄ - MgH₂ nanoparticles J.R. Hattrick-Simpers, National Institute of Standards and Technology, Gaithersburg, MD/USA; M.U. Niemann, University of South Florida, Tampa, FL/USA; C. Chiu, J.E. Maslar, National Institute of Standards and Technology, Gaithersburg, MD/USA; S.S. Srinivasan, Tuskegee University, AL/USA; E.K. Stefanakos, University of South Florida, Tampa, FL/USA; L.A. Benderksy, National Institute of Standards and Technology, Gaithersburg, MD/USA	B/700
11:30 - 11:50	Influence of high-pressure gaseous hydrogen on the mechanical properties of Al 6082 T6 alloy H. Li, T. Michler, Adam Opel GmbH, Rüsselsheim/D; E. Sattler, E. Roos, University of Stuttgart/D	B/702
11:50 - 12:10	Use of neutron diffraction for structural analysis of iron-catalyzed Mg₂Pd alloys J. Lang, J.-G. Roqueferre, J. Huot, Université du Québec à Trois-Rivières/CDN; A.L. Yonkeu, I. Swainson, National Research Council Canada, Chalk River/CDN	B/705
12:10 - 12:30	Hydrogen storage and emission characteristics of an innovative composite materials of Pt_{3.3}Zr_{2.7}O/Li₂ZrO₃/Pt_{3.3}Zr_{2.7}O sandwich exposed to air vapor at room temperature K. Morita, Meijo University, Nagoya/J; B. Tsuchiya, S. Nagata, Tohoku University, Sendai/J; Y. Oya, K. Okuno, Shizuoka University/J	B/707
12:30 - 12:50	Hydrogen storage in binary and ternary Mg-based alloys: a comprehensive experimental study W.P. Kalisvaart, C.T. Harrower, J. Haagsma, B. Zahiri, E.J. Lubber, C. Ophus, D. Mitlin, University of Alberta, Edmonton/CDN; E. Poirier, H. Fritzsche, Canadian Neutron Beam Centre, Chalk River/CDN	B/710
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
Chair:	<i>J. Huot, Université du Québec à Trois-Rivières/CDN</i>	
14:00 - 14:20	Effective diffusion-limited kinetics of metal hydrides incorporating realistic particle morphology T.G. Voskuilen, K.C. Smith, T.L. Pourpoint, S. Fisher, Purdue University, West Lafayette, IN/USA	B/713
14:20 - 14:40	Hydrogen stored on metal-organic frameworks for automotive fuel-cell applications U. Mueller, N. Trukhan, E. Leung, BASF SE, Ludwigshafen/D; E. Mori, K. Hirose, Toyota Motor Corp., Higashifuji/J	B/716
14:40 - 15:00	Confinement effects and hydrogen storage in ice-based clathrates M. Russina, E. Kemner, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH/D; M. Celli, L. Ulivi, Istituto dei Sistemi Complessi, Sesto Fiorentino/I; F. Mezei, Los Alamos National Laboratory, NM/USA	B/717
15:00 - 15:40	KEYNOTE LECTURE Physisorption of hydrogen on novel nanoporous materials M. Hirscher, B. Schmitz, I. Krkljus, M. Schlichtenmayer, K. Manickam, MPI for Metals Research, Stuttgart/D	B/718
15:40 - 16:10	COFFEE BREAK	
Chair:	<i>A. Borgschulte, Empa - Swiss Federal Laboratories for Materials Testing and Research, Dübendorf/CH</i>	
16:10 - 16:30	NaAlH₄/carbon and NaH/carbon nanocomposites: synthesis, characterization and hydrogen storage properties P. Adelhelm, University of Giessen/D; J. Gao, K.P. de Jong, P.E. de Jongh, Utrecht University/NL	B/720
16:30 - 16:50	Room temperature and thermal decomposition of magnesium hydride/deuteride thin films J.R. Ares, F. Leardini, J. Bodega, M.D. Maciá, P. Diaz-Chao, I.J. Ferrer, J.F. Fernández, C. Sánchez, Universidad Autonoma de Madrid/E	B/721
16:50 - 17:10	Complete conversion of hydrous hydrazine to hydrogen at room temperature for chemical hydrogen storage S.K. Singh, Q. Xu, National Institute of Advanced Industrial Science and Technology (AIST), Ikeda, Osaka/J	B/724
17:10 - 17:30	Rotating BH₄ in alkaline borohydrides A. Remhof, Z. Lodziana, P. Martelli, O. Friedrichs, A. Züttel, Empa - Federal Institute for Materials Testing and Research, Dübendorf/CH; J.P. Embs, T. Strässle, Paul Scherrer Institute, Villigen/CH	B/727
17:30 - 17:50	Effects of confinement on the thermodynamics and kinetics of metal hydrides templated in ordered nanoporous frameworks M.D. Allendorf, R. Bhakta, R. Behrens, Sandia National Laboratories, Livermore, CA/USA; E.H. Majzoub, X. Liu, D. Peaslee, University of Missouri, St. Louis, MO/USA; J.L. Herberg, Lawrence Livermore National Laboratories, CA/USA; L.K. Wagner, J.C. Grossman, Massachusetts Institute of Technology, Cambridge, MA/USA	B/730

ROOM:	Alfred-Mombert-Saal – Level -1	Book/Page
	CATALYSTS FOR SUSTAINABLE ENERGY APPLICATIONS	
Chair:	<i>C. Breitkopf, TU München/D</i>	
09:00 - 09:40	KEYNOTE LECTURE Development of hierarchical nanostructures for high performance catalysts U. Hörmann, University of Ulm/D; N. Adkins, CERAM, London/UK; R. Wunderlich, H.-J. Fecht, University of Ulm/D	B/837
09:40 - 10:00	Tailoring mixed La/Ce-oxide nanocatalysts for water-gas-shift S. Liang, Y. Wang, University of Pittsburgh, PA/USA; G. Vesper, National Energy Technology Laboratory and University of Pittsburgh, PA/USA	B/838
10:00 - 10:20	Autothermal hydrogen production over Rh catalyst: microscopical study of catalyst deactivation along the reaction path B. Reznik, M. Hartmann, O. Deutschmann, Karlsruhe Institute of Technology (KIT)/D	B/839
10:20 - 10:40	Co₃O₄ synthesized by different preparation methods and its application in methane decomposition P. Jana, V.A. de la Peña, J. Coronado, D. Serrano, IMDEA Energía, Mostoles (Madrid)/E	B/842
10:40 - 11:10	COFFEE BREAK	
Chair:	<i>C. Breitkopf, TU München/D</i>	
11:10 - 11:30	Nanocrystalline doped ceria-zirconia solid solutions promoted by Pt and/or Ni: structure, surface properties and catalytic performance in reactions of hydrogen and syngas production N.V. Mezentseva, G.M. Alikina, E.G. Zevak, E.L. Gubanova, N.N. Sazonova, A. Bobin, V.A. Sadykov, Boreskov Institute of Catalysis, Novosibirsk/RUS; Y. Shuurman, C. Mirodatos, Institut de Recherches sur la Catalyse et l'Environnement de Lyon/F	B/845
11:30 - 11:50	Monodisperse nickel nanoparticles and their catalysis in hydrolytic dehydrogenation of ammonia borane O. Metin, Middle East Technical University, Ankara/TR; V. Mazumder, Brown University, Providence, RI/USA; S. Özkar, Middle East Technical University, Ankara/TR; S. Sun, Brown University, Providence, RI/USA	B/848
11:50 - 12:10	Catalytic hydroconversion of tricaprolin and caprylic acid as model reaction for bio-fuel production from triglycerides L. Boda, MOL Plc, Százhalombatta/H; G. Onyestyák, H. Solt, F. Lónyi, J. Valyon, INC CRC HAS, Budapest/H; A. Thernesz, MOL Plc, Százhalombatta/H	B/849
12:10 - 12:50	KEYNOTE LECTURE Conversion of sustainable energy resources to fuels: challenges and opportunities for the development of new catalysts A. Bell, University of California, Berkeley, CA/USA	B/852
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
Chair:	<i>H.-J. Fecht, University of Ulm/D</i>	
14:00 - 14:20	Biodiesel production by using lipase immobilized onto novel silica-based hybrid foams N. Brun, A. Babeau Garcia, V. Oestreicher, Université de Bordeaux, Pessac/F; H. Deleuze, Université de Bordeaux, Talence/F; G. Laurent, C. Sanchez, Université Pierre et Marie Curie, Paris/F; F. Durant, R. Backov, Université de Bordeaux, Pessac/F	B/853
14:20 - 14:40	Mesoporous tin-triflate materials as versatile catalysts for biodiesel production M. Verziu, University of Bucharest/RO; J. El Haskouri, D. Beltran, P. Amoros, Universitat de Valencia/E; D. Macovei, C.M. Teodorescu, National Institute of Materials Physics, Bucharest-Magurele/RO; S.M. Coman, V.I. Parvulescu, University of Bucharest/RO	B/856
14:40 - 15:00	CaO solid catalysts for biodiesel production: a new way to produce bioenergy by heterogeneous catalysis J.F. Gomes, J.F. Puna, ISEL - Instituto Superior de Engenharia de Lisboa/P; J.C. Bordado, Institute of Biotechnology and Bioengineering - IST, Lisboa/P; M.J.N. Correia, Chemical Process Centre - IST, Lisboa/P; A.P.S. Dias, ICEMS, IST, Lisboa/P	B/859
15:00 - 15:20	Catalysts for hydrogen production from biomass-ethanol and biomass-tar Y. Sekine, E. Kikuchi, Waseda University, Tokyo/J	B/862
15:20 - 15:40	Direct oxidation of methane to methanol at low temperatures M. Soorholtz, R. Palkovits, C. Baltés, F. Schüth, MPI for Coal Research, Muelheim an der Ruhr/D; P. Kuhn, A. Thomas, M. Antonietti, MPI of Colloids and Interfaces, Potsdam/D	B/865
15:40 - 16:10	COFFEE BREAK	
Chair:	<i>C. Bianchini, Istituto di Chimica dei Composti Organometallici (ICCOM-CNR), Sesto Fiorentino/I</i>	
16:10 - 16:50	KEYNOTE LECTURE Nano photocatalytic materials: possibilities & challenges J. Ye, National Institute for Materials Science (NIMS), Tsukuba/J	B/868
16:50 - 17:10	TiO₂ surface analysis for enhanced stability of DSSCs M.-I. Baraton, CNRS and University of Limoges/F; L. Merhari, CERAMEC R&D, Limoges/F	B/869
17:10 - 17:30	Hydrodeoxygenation of bio-derived phenols to hydrocarbons in water C. Zhao, X. Li, J.A. Lercher, TU München, Garching/D	B/872
17:30 - 17:50	Performance of new generation TWC catalytic systems working under different conditions in order to reduce the emission of a global warming gas: N₂O I. Mac-Beath, S. Castillo, R. Camposeco, M. Moran-Pineda, Instituto Mexicano del Petróleo, México, D.F./MEX (to be confirmed)	B/873

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ROOM:	Friedrich-Weinbrenner-Saal – Level o	
08:45 - 09:45	PLENARY LECTURE Catalysis for energy storage R. Schlögl, Fritz-Haber-Institute of the Max Planck Society, Berlin/D	A/4
09:45 - 10:15	COFFEE BREAK	
10:15 - 11:15	PLENARY LECTURE Materials challenges for the energy technology revolution: expanding the role of nuclear power and developing inertial fusion energy T. Diaz de la Rubia, Lawrence Livermore National Laboratory, CA/USA	A/5
11:15 - 12:15	PLENARY LECTURE Non-conventional solutions for the protection of materials at high temperatures M. Schütze, DECHEMA e.V., Frankfurt am Main/D	A/6
12:15 - 12:30	POSTER PRIZE AWARDS 6 poster prizes will be distributed in total	
12:30 - 14:00	LUNCH BREAK - Lunch will be available at the conference venue for self-payment	
ROOM:	Johann-Peter-Hebel-Saal – Level -1	
	MATERIALS FOR LARGE POWER PLANTS	
Chair:	<i>D. Féron, CEA, Gif-sur-Yvette/F</i>	
14:00 - 14:20	New insights on microcrack propagation in Bcc iron V. Borodin, Russian Research Centre of the Kurchatov Institute, Moscow/RUS; P. Vladimirov, A. Möslang, Karlsruhe Institute of Technology (KIT)/D	A/215
14:20 - 14:40	On the potential of tungsten-vanadium composites for high temperature application in nuclear fusion J. Hohe, Fhl for Mechanics of Materials IWM, Freiburg/D; P. Gumbsch, Karlsruhe Institute of Technology (KIT)/D	A/218
14:40 - 15:00	Electrochemically-based technologies for processing of tungsten components in fusion technology N. Holstein, J. Konys, W. Krauss, J. Lorenz, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	A/221
15:00 - 15:20	Tungsten materials for structural divertor applications M. Rieth, Karlsruhe Institute of Technology (KIT)/D; A. Hoffmann, PLANSEE Metall GmbH, Reutte/A; E. Materna-Morris, M. Rohde, Karlsruhe Institute of Technology (KIT)/D	A/224
15:20 - 15:40	Pulsed E-beams to improve corrosion barriers for lead alloy cooled reactors: overview and dedicated mechanical tests A. Weisenburger, A. Jianu, A. Heinzl, M. Del Giacco, G. Müller, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	A/227
15:40 - 16:10	COFFEE BREAK	
Chairs:	<i>N. Bagcivan, RWTH Aachen University/D & F.J. Pérez-Trujillo, Universidad Complutense de Madrid/ES</i>	
16:10 - 16:50	KEYNOTE LECTURE Trends in the design of metallic coatings for harsh turbine environments B. Gleeson, University of Pittsburgh, PA/USA	A/230
16:50 - 17:10	Advanced TBCs deposited by EB-PVD technology: double- and quadruple-ceramic layers consisting of γYSZ and $\text{La}_2\text{Zr}_2\text{O}_7$ K. Bobzin, N. Bagcivan, S. Theiss, B. Yildirim, RWTH Aachen University/D	A/233
17:10 - 17:30	Magnetron-sputtered coatings for titanium aluminide alloys E. Godlewska, M. Mitoraj, R. Mania, S. Zimowski, M. Kot, AGH University of Science and Technology, Krakow/PL	A/236
17:30 - 17:50	Formation and properties of periodic patterns in protective diffusion coatings containing aluminum S. Oberhauser, Inncoa GmbH, Neustadt a.d. Donau/D; C. Strobl, University of Applied Sciences Ingolstadt/D; D. Rafaja, TU Bergakademie Freiberg/D	A/239
17:50 - 20:00	POSTER SESSION 2 – Authors of posters are expected to be available on their poster during the Poster Session 2	
20:00 - 24:00	CONFERENCE DINNER	

		Book/Page
ROOM:	Friedrich-Weinbrenner-Saal – Level o	
08:45 - 09:45	PLENARY LECTURE Catalysis for energy storage R. Schlögl, Fritz-Haber-Institute of the Max Planck Society, Berlin/D	A/4
09:45 - 10:15	COFFEE BREAK	
10:15 - 11:15	PLENARY LECTURE Materials challenges for the energy technology revolution: expanding the role of nuclear power and developing inertial fusion energy T. Diaz de la Rubia, Lawrence Livermore National Laboratory, CA/USA	A/5
11:15 - 12:15	PLENARY LECTURE Non-conventional solutions for the protection of materials at high temperatures M. Schütze, DECHEMA e.V., Frankfurt am Main/D	A/6
12:15 - 12:30	POSTER PRIZE AWARDS 6 poster prizes will be distributed in total	
12:30 - 14:00	LUNCH BREAK - Lunch will be available at the conference venue for self-payment	
ROOM:	Hans-Thoma-Saal – Level -1	
	MATERIALS FOR RENEWABLE ENERGY CONVERSION	
Chair:	<i>C. Jooss, University of Göttingen/D</i>	
14:00 - 14:20	Engineering of novel photoactive inorganic/organic semiconductor hybrid materials R. Beranek, University of Erlangen-Nuremberg, Erlangen/D	A/370
14:20 - 14:40	New cost-effective manufacture of DSSC TiO_2 paste with enhanced sensitizer anchoring properties G. Demopoulos, C. Charbonneau, K.E. Lee, G.-B. Shan, M.A. Gomez, R. Gauvin, McGill University, Montreal/CDN	A/372
14:40 - 15:40	JOINT PANEL DISCUSSION: New strategies for maximum light harvesting Chair: D. Cahen, Weizmann Institute of Science, Rehovot/IL Panelists: D. Ginley, National Renewable Energy Laboratory NREL, Golden, CO/USA C. Jooss, University of Göttingen/D D. Meissner, Tallinn University of Technology/EW K. Nielsch, University of Hamburg/D	
15:40 - 16:10	COFFEE BREAK	
Chairs:	<i>G. Flamant, CNRS, Font-Romeu/F & D. Ginley, National Renewable Energy Laboratory NREL, Golden, CO/USA</i>	
16:10 - 16:50	KEYNOTE LECTURE Electronic structure at interfaces of organic solar cell materials C. Hein, E. Mankel, T. Mayer, W. Jaegermann, Darmstadt University of Technology/D	A/375
16:50 - 17:10	Nanoscale morphology of bulk heterojunctions in organic photovoltaics M.F. Toney, C.E. Miller, Stanford Synchrotron Radiation Lightsource, Menlo Park, CA/USA; R. Gysel, N. Cates, Z. Beiley, M.D. McGehee, Stanford University, CA/USA	A/378
17:30 - 17:50	Morphology formation in solution cast polymer-fullerene blends for organic photovoltaics B. Schmidt-Hansberg, Karlsruhe Institute of Technology (KIT)/D; M. Sanyal, MPI for Metals Research, Stuttgart/D; B. Brenneis, M. Baunach, M.F.G. Klein, A. Colsmann, U. Lemmer, Karlsruhe Institute of Technology (KIT)/D; E. Barrena, MPI for Metals Research, Stuttgart/D; P. Scharfer, W. Schabel, Karlsruhe Institute of Technology (KIT)/D	A/380
17:30 - 17:50		
17:50 - 20:00	POSTER SESSION 2 – Authors of posters are expected to be available on their poster during the Poster Session 2	
20:00 - 24:00	CONFERENCE DINNER	

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ROOM:	Friedrich-Weinbrenner-Saal – Level o	
08:45 - 09:45	PLENARY LECTURE Catalysis for energy storage R. Schlögl, Fritz-Haber-Institute of the Max Planck Society, Berlin/D	A/4
09:45 - 10:15	COFFEE BREAK	
10:15 - 11:15	PLENARY LECTURE Materials challenges for the energy technology revolution: expanding the role of nuclear power and developing inertial fusion energy T. Diaz de la Rubia, Lawrence Livermore National Laboratory, CA/USA	A/5
11:15 - 12:15	PLENARY LECTURE Non-conventional solutions for the protection of materials at high temperatures M. Schütze, DECHEMA e.V., Frankfurt am Main/D	A/6
12:15 - 12:30	POSTER PRIZE AWARDS 6 poster prizes will be distributed in total	
12:30 - 14:00	LUNCH BREAK - Lunch will be available at the conference venue for self-payment	
ROOM:	Clubraum – Level o	
	THERMOELECTRICS: FROM HIGHLY EFFICIENT STRUCTURES TO HIGH-TEMPERATURE GENERATORS	
Chairs :	Y. Gelbstein, Ben-Gurion University of the Negev, Beer-Sheva/IL & K. Nielsch, University of Hamburg/D	
14:00 - 14:20	Influence of spark plasma sintering parameters on the thermo-electric performance of nanocrystalline silicon N. Stein, G. Schiering, N. Petermann, H. Wiggers, R. Theissmann, R. Schmechel, University of Duisburg-Essen, Duisburg/D	A/505
14:20 - 14:40	Modeling phonon transport and thermal conductivity in Si/Ge superlattices and nanocomposites D. Singh, J.Y. Murthy, T.S. Fisher, Purdue University, West Lafayette, IN/USA	A/506
14:40 - 15:00	Enhanced thermoelectric performance of nanostructured Bismuth Antimony tellurium bulk alloys M. Soulier, C. Navone, J. Simon, M. Plissonnier, CEA, Grenoble/F	A/507
15:00 - 15:40	KEYNOTE LECTURE Wafer based thermoelectric generators, coolers and sensors: state of art and future prospects J. Nurnus, Micropelt GmbH, Freiburg/D	A/512
15:40 - 16:10	COFFEE BREAK	
16:10 - 16:30	Assembled Sb₂Te₃ nanoparticles by vapor transport growth with enhanced thermoelectric properties J. Chen, T. Sun, H. Hng, J. Ma, F. Boey, Q. Yan, Nanyang Technological University, Singapore/SGP	A/513
16:30 - 16:50	Thermoelectric properties of n-type Bi₂Te_{2.7}Se_{0.3} and p-type Bi_{0.5}Sb_{1.5}Te₃ films for micro-cooler applications P. Qizhen, S. Ye Ko, S. Ezhilvalavan, Republic Polytechnic, Woodlands/SGP; M. Jan, H. Huey Hoon, Nanyang Technological University/SGP	A/515
16:50 - 17:10	Conductivity anisotropy in nanostructured materials N.F. Hinsche, B.Y. Yavorsky, P. Zahn, I. Mertig, University of Halle/D	A/519
17:10 - 17:30	Optimization of dimensionless figure of merit in oxide thin film thermoelectrics D. Osborne, S. Huxtable, Virginia Tech, Blacksburg, VA/USA; A. Tiwari, University of Utah, Salt Lake City, UT/USA; J.T. Abiade, Virginia Tech, Blacksburg, VA/USA	A/520
17:30 - 17:50		
17:50 - 20:00	POSTER SESSION 2 – Authors of posters are expected to be available on their poster during the Poster Session 2	
20:00 - 24:00	CONFERENCE DINNER	

		Book/Page
ROOM:	Friedrich-Weinbrenner-Saal – Level o	
08:45 - 09:45	PLENARY LECTURE Catalysis for energy storage R. Schlögl, Fritz-Haber-Institute of the Max Planck Society, Berlin/D	A/4
09:45 - 10:15	COFFEE BREAK	
10:15 - 11:15	PLENARY LECTURE Materials challenges for the energy technology revolution: expanding the role of nuclear power and developing inertial fusion energy T. Diaz de la Rubia, Lawrence Livermore National Laboratory, CA/USA	A/5
11:15 - 12:15	PLENARY LECTURE Non-conventional solutions for the protection of materials at high temperatures M. Schütze, DECHEMA e.V., Frankfurt am Main/D	A/6
12:15 - 12:30	POSTER PRIZE AWARDS 6 poster prizes will be distributed in total	
12:30 - 14:00	LUNCH BREAK - Lunch will be available at the conference venue for self-payment	
ROOM:	Viktor-von-Scheffel-Saal – Level -1	
	HYDROGEN STORAGE	
Chair:	B. Dam, Delft University of Technology/NL	
14:00 - 14:20	Hydrogen storage in MOF materials at temperatures near ambient S. Luzan, A.V. Talyzin, Umeå University/S	B/733
14:20 - 14:40	High specific surface area metal organic frameworks (MOFs) and activated carbons for hydrogen storage M. Schlichtenmayer, M. Hirscher, MPI for Metals Research, Stuttgart/D; N. Klein, I. Senkovska, S. Kaskel, Dresden University of Technology/D	B/736
14:40 - 15:00	Hydrogen storage in ordered and porous carbon/Pd composites C. Matei Ghimbeu, P. Dibandjo, Institut de Science des Matériaux de Mulhouse/F; C. Zlotea, Institut de Chimie et des Matériaux Paris-Est, Thiais/F; R. Gadiou, Institut de Science des Matériaux de Mulhouse/F; M. Latroche, Institut de Chimie et des Matériaux Paris-Est, Thiais/F; C. Vix-Guterl, Institut de Science des Matériaux de Mulhouse/F	B/739
15:00 - 15:20	Thermodynamic properties of NaAlH₄ / activated carbon fibre composites W. Lohstroh, A. Roth, M. Fichtner, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/742
15:20 - 15:40	LiBH₄ heterogeneous nucleation within hierarchically structured carbonaceous foams: application as host sites for hydrogen storage N. Brun, R. Backov, Université de Bordeaux, Pessac/F; H. Deleuze, Université de Bordeaux, Talence/F; C. Sanchez, Université Pierre et Marie Curie, Paris/F; R. Janot, M. Morcrette, Université de Picardie, Amiens/F	B/745
15:40 - 16:10	COFFEE BREAK	
	ELECTROCHEMICAL ENERGY STORAGE: BATTERIES AND SUPERCAPACITORS	
Chairs:	K.-C. Möller, Fraunhofer ISC, Würzburg/D & M. Winter, University of Münster/D	
16:10 - 16:30	Electrochemically reduced graphene oxide films for supercapacitor X.-Y. Peng, Dublin City University/IRL; X.-X. Liu, Northeastern University, Shenyang/PRC; D. Diamond, K.-T. Lau, Dublin City University/IRL	B/557
16:30 - 16:50	Composite of conducting polymers and carbon nanostructures for energy storage F. Huang, E. Vanhaecke, M. Rønning, Norwegian University of Science and Technology (NTNU), Trondheim/N; M. Thomassen, SINTEF Materials and Chemistry, Trondheim/N; D. Chen, Norwegian University of Science and Technology (NTNU), Trondheim/N	B/560
16:50 - 17:10	Hierarchically structured carbonaceous foams generation and their use as electrochemical energy storage devices N. Brun, R. Backov, Université de Bordeaux, Pessac/F; M. Birot, H. Deleuze, G. Pécastaing, Université de Bordeaux, Talence/F; S.R.S. Prabaharan, M. Morcrette, Université de Picardie, Amiens/F	B/562
17:10 - 17:50	KEYNOTE LECTURE Lithium metal batteries: backward to the future? S. Passerini, University of Münster/D	B/565
17:50 - 20:00	POSTER SESSION 2 – Authors of posters are expected to be available on their poster during the Poster Session 2	
20:00 - 24:00	CONFERENCE DINNER	

		Book/Page
ROOM:	Friedrich-Weinbrenner-Saal – Level 0	
08:45 - 09:45	PLENARY LECTURE Catalysis for energy storage R. Schlögl, Fritz-Haber-Institute of the Max Planck Society, Berlin/D	A/4
09:45 - 10:15	COFFEE BREAK	
10:15 - 11:15	PLENARY LECTURE Materials challenges for the energy technology revolution: expanding the role of nuclear power and developing inertial fusion energy T. Diaz de la Rubia, Lawrence Livermore National Laboratory, CA/USA	A/5
11:15 - 12:15	PLENARY LECTURE Non-conventional solutions for the protection of materials at high temperatures M. Schütze, DECHEMA e.V., Frankfurt am Main/D	A/6
12:15 - 12:30	POSTER PRIZE AWARDS 6 poster prizes will be distributed in total	
12:30 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
ROOM:	Alfred-Mombert-Saal – Level -1	
	CATALYSTS FOR SUSTAINABLE ENERGY APPLICATIONS	
Chairs:	M.-I. Baraton, Université de Limoges/F & A. Bell, University of California, Berkeley, CA/USA	
14:00 - 14:40	KEYNOTE LECTURE Steam reforming - fossil to sustainable feed stocks K. Seshan, University of Twente, Enschede/NL	B/876
14:40 - 15:00	Generation of CO_x-free H₂ for fuel cell from ammonia decomposition: a combined DBD plasma and cheap catalysts technique L. Wang, Y. Zhao, W. Gong, H. Guo, Dalian University of Technology/PRC	B/877
15:00 - 15:20	Nanocomposite cermets for hydrogen production and SOFC anodes N. Mezentseva, V. Sadykov, G. Alikina, V. Pelipenko, Boreskov Institute of Catalysis, Novosibirsk/RUS; J.R.H. Ross, University of Limerick/IRL	B/879
15:20 - 15:40	The role of the intermetallic compound PdZn in methanol steam reforming M. Friedrich, M. Armbrüster, MPI for Chemical Physics of Solids, Dresden/D	B/882
15:40 - 16:10	COFFEE BREAK	
16:10 - 16:30	CO desorption kinetics under conditions of relevance to PEM fuel cells operating with reformat gas A. Pitois, A. Pilenga, G. Tsotridis, Joint Research Centre of the European Commission, Petten/NL	B/884
16:30 - 16:50	Dry reforming of methane over LnFe_{1-x}Ni_xO₃ perovskites and their composites with Gd-doped ceria S. Pavlova, G. Alikina, R. Bunina, L. Kapokova, V. Sadykov, T. Krieger, A. Ishchenko, V. Rogov, Boreskov Institute of Catalysis SB RAS, Novosibirsk/RUS	B/887
16:50 - 17:10	Changes of the surface structure of supported Cu catalysts during the ethanol reforming K. Marko, I. Sarusi, K. Baán, A. Oszko, K. Nagy, A. Erdohelyi, University of Szeged/H	B/890
17:10 - 17:30	New generation of catalytic coatings and novel microstructured reactor for the water-gas shift reaction A.R. Dubrovskiy, V.S. Dolmatov, S.A. Kuznetsov, Kola Science Centre RAS, Apatity/RUS; E.V. Rebrov, J.C. Schouten, University of Technology, Eindhoven/NL	B/893
17:30 - 17:50	Nanomaterials as highly active catalysts for microreactors in hydrogen and fuel applications P. Pfeifer, O. Görke, K. Haas-Santo, P. Piermartini, T. Schuhmann, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; A. Ates, Cumhuriyet University, Sivas/TR; A. Merker, D. Telitschkin, EADS Astrium Space Transportation, Lampoldshausen/D	B/895
17:50 - 20:00	POSTER SESSION 2 – Authors of posters are expected to be available on their poster during the Poster Session 2	
20:00 - 24:00	CONFERENCE DINNER	

		Book/Page
ROOM:	Johann-Peter-Hebel-Saal – Level -1	
	MATERIALS FOR LARGE POWER PLANTS	
CHAIRS:	N. Bagcivan, RWTH Aachen University/D & F.J. Pérez-Trujillo, Universidad Complutense de Madrid/ES	
09:00 - 09:40	KEYNOTE LECTURE Steam oxidation behavior of high strength newly developed ferritic/martensitic steels at 650^o C A. Agüero, V. González, M. Gutierrez, Instituto Nacional de Técnica Aeroespacial, Torrejón de Ardoz/E; P. Mayr, Massachusetts Institute of Technology, Cambridge, MA/USA; K. Spiradek-Hahn, AIT Austrian Institute of Technology GmbH, Seibersdorf/A	A/242
09:40 - 10:00	Behaviour of ceramic thermal barrier coating systems on martensitic steels in steam at temperatures between 550 and 650^oC T. Hüttel, L. Singheiser, W.J. Quadackers, Forschungszentrum Jülich GmbH/D	A/245
10:00 - 10:20	High temperature protection of alloy 347 by coating with spherical μ-Al particles M. Juez-Lorenzo, V. Kolarik, H. Fietzek, P. Kodjamanova, FhI for Chemical Technology ICT, Pfinztal/D	A/247
10:20 - 10:40	Steam oxidation resistant nanostructured coatings on gamma-TiAl by HIPIMS I. Lasanta, M. Tejero, A. Rey, A. Fernandez, S. Mato, M.P. Hierro, J. Nieto, F.J. Pérez Trujillo, Universidad Complutense de Madrid/E	A/250
10:40 - 11:10	COFFEE BREAK	
	NANOSTRUCTURES FOR ENERGY APPLICATIONS	
Chairs:	P.M. Ajayan, Rice University, Houston, TX/USA & S.R.P. Silva, University of Surrey, Guildford/UK	
11:10 - 11:30	Energy related applications of magnetic materials O. Gutfleisch, T. Woodcock, J. Lyubina, K. Skokov, L. Schultz, IFW Dresden/D	B/1041
11:30 - 11:50	High-temperature superconducting materials for power system applications M. Noe, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/1042
11:50 - 12:10	Design and analysis of a highly efficient adsorbent heat G. Földner, U. Wittstadt, L. Schnabel, FhI for Solar Energy Systems (ISE), Freiburg/D; F.P. Schmidt, Karlsruhe Institute of Technology (KIT)/D; P. Schossig, H.-M. Henning, FhI for Solar Energy Systems (ISE), Freiburg/D	B/1045
12:10 - 12:50	KEYNOTE LECTURE Magnetocaloric materials for near room temperature magnetic refrigeration - an energy efficient, green cooling technology K.A. Gschneidner, Jr., V.K. Pecharsky, Iowa State University, Ames, IA/USA	B/1048
12:50	Lunch Break - Lunch will be available at the conference venue for self-payment	
14:00 - 14:20	Nanoporous SiO₂ anti reflective coating on glass for solar applications T. Hofmann, Centrosolar Glas GmbH & Co. KG, Fürth/D	B/1050
14:20 - 14:40	Effect of nano-imprinting on open-circuit voltage of organic solar cells J.B. Emah, R.J. Curry, S.R.P. Silva, University of Surrey, Guildford/UK	B/1051
14:40 - 15:00	Nano-inclusion materials from solutions A. Pohl, G. Westin, Å. Ekstrand, E. Wäckelgård, T. Boström, Uppsala University/S; K. Jansson, Stockholm University/S	B/1054
15:00 - 15:20	Development of nanostructured electrodes on foils E. Vanhaecke, F. Huang, M. Rønning, D. Chen, Norwegian University of Science and Technology (NTNU), Trondheim/N	B/1055
15:20 - 15:40	Electron conducting poly-1,2,4-triazoles A. Boschetti de Fierro, M.L. Ponce, V. Abetz, GKSS Research Centre Geesthacht GmbH/D	B/1057
15:40 - 16:00	Single-walled carbon nanotubes/anatase composites for energy applications I. Tacchini, E. Terrado, A. Ansón, M.T. Martinez, Instituto de Carboquímica-CSIC, Zaragoza/E	B/1058
16:00 - 17:00	FAREWELL	

ROOM:	Hans-Thoma-Saal - Level -1	Book/Page
	MATERIALS FOR RENEWABLE ENERGY CONVERSION	
Chairs:	<i>G. Flamant, CNRS, Font-Romeu/F & D. Ginley, National Renewable Energy Laboratory NREL, Golden, CO/USA</i>	
09:00 - 09:40	KEYNOTE LECTURE New (and renewed) vistas for solar cells, via molecular control over interfaces D. Cahen, Weizmann Institute of Science, Rehovot/IL	A/381
09:40 - 10:00	OPV-hybride: bulk sensitization of inorganic matrices by organic absorber molecules T. Mayer, A. Decker, A. Naumann, E. Mankel, W. Jaegermann, Darmstadt University of Technology/D	A/384
10:00 - 10:20	Photovoltaic energy conversion based on strongly correlated oxides G. Saucke, B. Iffland, C. Thees, University of Goettingen/D; Y. Zhu, Brookhaven National Laboratory, Upton, NY/USA; J. Hoffmann, C. Jooss, University of Goettingen/D	A/387
10:20 - 10:40	New intermediate band materials for better use of solar spectrum in photovoltaic cells P. Palacios, I. Aguilera, K. Sánchez, P. Wahnón, Universidad Politecnica de Madrid/E; R. Lucena, J.C. Conesa, CSIC, Madrid/E	A/389
10:40 - 11:10	COFFEE BREAK	
11:10 - 11:30	Quantum-confined nanocrystals as building blocks for next-generation photovoltaics T. Hanrath, J. Choi, K. Bian, Y.F. Lim, Cornell University, Ithaca, NY/USA	A/392
11:30 - 11:50	Preparation of silicon granules with tight size distribution - two novel low cost high throughput processes for the silicon industry T. Brandau, E. Brandau, BRACE GmbH, Alzenau/D	A/393
11:50 - 12:10	Nanostructured antireflectance coatings and their application to solar cells J. Moghal, University of Oxford/UK; G. Wakefield, M. Gardener, Oxford Advanced Surfaces/UK; A.A.R. Watt, University of Oxford/UK	A/396
12:10 - 12:30	Transparent conductors based on plasmonic nanocomposites M. Elbahi, GKSS-Forschungszentrum Geesthacht GmbH and University of Kiel/D; V.S.K. Chakravadhanula, M. Keshavarz Hedayati, V. Zaporozhtchenko, F. Faupel, University of Kiel/D	A/400
12:30 - 12:50	New inorganic thin film solar cells: surface properties needed for n-i-p devices A. Fuchs, A. Klein, W. Jaegermann, Darmstadt University of Technology/D	A/401
12:50	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
14:00 - 14:40	KEYNOTE LECTURE Combinatorial development of amorphous mixed metal oxide transparent conductors for photovoltaics J.D. Perkins, T. Gennett, J.E. Leisch, P.A. Parilla, M.F.A.M. van Hest, J.J. Berry, L.M. Gedvilas, V. Bollinger, D.S. Ginley, National Renewable Energy Laboratory, Golden, CO/USA	A/404
14:40 - 15:00	Large-area, low-temperature deposition of chalcopyrite absorbers for thin film solar cells by reactive magnetron sputtering K. Ellmer, Helmholtz-Zentrum Berlin für Materialien und Energie GmbH/D	A/405
15:00 - 15:20	CZTS monograin membranes D. Meissner, M. Altosaar, J. Krustok, E. Mellikov, Tallinn University of Technology/EST	A/408
15:20 - 15:40	Photoelectrochemical solar energy conversion and hydrogen production by oxide semiconductor heterojunction electrodes Z.G. Zou, Nanjing University/PRC	A/409
15:40 - 16:00	CdTe thin film solar cells: optimization of material, morphology and device preparation J. Schaffner, A. Barati, V. Krishnakumar, G. Fu, H.-J. Schimper, G. Haindl, A. Swirschuk, E. Gunnesch, A. Schneikart, A. Tüschchen, A. Klein, W. Jaegermann, Darmstadt University of Technology/D	A/410
16:00 - 17:00	FAREWELL	

ROOM:	Clubraum – Level o	Book/Page
	THERMOELECTRICS: FROM HIGHLY EFFICIENT STRUCTURES TO HIGH-TEMPERATURE GENERATORS	
Chairs :	<i>J. Nurnus, Micropelt GmbH, Freiburg/D & M.-C. Record, University of Aix-Marseille/F</i>	
09:00 - 09:40	KEYNOTE LECTURE Practical considerations for thermoelectric power generation using IV-VI compounds Y. Gelbstein, Ben-Gurion University of the Negev, Beer-Sheva/IL	A/522
09:40 - 10:00	Simultaneous measurements of Seebeck coefficient and thermal conductivity from 4K to 400K M. Bardoux, X. Kleber, P. Chantrenne, CNRS - INSA de Lyon, Villeurbanne/F	A/523
10:00 - 10:20	Palladium sulfide (PdS) films a new thermoelectric sulfide compound J.R. Ares, P. Díaz-Chao, J. Clamagirand, M.D. Maciá, I.J. Ferrer, C. Sánchez, Universidad Autonoma de Madrid/E	A/526
10:20 - 10:40	Thermoelectrics for high temperatures - a survey about state of the art H. Böttner, Fhl for Physical Measurement Techniques, Freiburg/D	A/529
10:40 - 11:10	COFFEE BREAK	
	MATERIALS FOR ENERGY STORAGE	
Chair:	<i>R. Tamme, German Aerospace Center, Stuttgart/D</i>	
11:10 - 11:30	High-performance latent heat storage by means of cellular metals and composites J. Meinert, O. Andersen, P. Quadbeck, J. Schmidt, Fraunhofer-Institute for Manufacturing and Advanced Materials, Dresden/D	B/779
11:30 - 11:50	Synthesis of nanoporous polyurethane beyond supercritical drying of aerogels A. Chalbi, E. Khazova, V. Posselt, T. Sottmann, R. Strey, University of Cologne/D; W. Friederichs, S. Lindner, Bayer MaterialScience AG, Leverkusen/D	B/782
11:50 - 12:10	Latent heat storage media for cold storage and distribution applications L. Huang, C. Pollerberg, C. Doetsch, Fhl for Environmental, Safety, and Energy Technology UMSICHT, Oberhausen/D	B/785
12:10 - 12:30	Combined sensible and latent heat storage with binary anhydrous salt mixtures with melting temperatures in the range 300 to 500 °C T. Bauer, C. Muehlhausen, D. Laing, R. Tamme, German Aerospace Center (DLR), Stuttgart/D	B/787
12:30 - 12:50	Tailored zeolite coatings for improved heat transformation R. Herrmann, J. Bauer, SorTech AG, Halle/D; J. Ofili, W. Schwieger, University Erlangen-Nuremberg/D	B/790
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
Chairs:	<i>B. Baretzky, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D & D. Shchukin, MPI for Colloidal Research, Golm/D</i>	
14:00 - 14:40	KEYNOTE LECTURE Nanoparticle barium titanate composite capacitors for high energy and power density applications T.C. Monson, D.L. Huber, C.B. Diantonio, M.R. Winter, T.P. Chavez, T.E. Stevens, B.D. Fellows, E.J. Cooley, J.L. Leger, A.W. Roesler, Sandia National Laboratory, Albuquerque, NM/USA	B/793
14:40 - 15:00	High temperature superconductors for power applications U. Klein, Bruker ASC GmbH, Bergisch Gladbach/D	B/794
15:00 - 15:20	Hydrothermal treatment of sorption materials - implications on adsorption heat pumps S.K. Henninger, Fraunhofer ISE, Freiburg/D; G. Munz, PSE AG, Freiburg/D; S. Müller, K.-F. Ratzsch, P. Schossig, H.-M. Henning, Fraunhofer ISE, Freiburg/D	B/795
15:20 - 15:40	Polymer coating as a novel approach for energy storage T. Borodina, D. Shchukin, MPI of Colloids and Interfaces, Golm/D	B/798
15:40 - 16:00	Nanoscale hollow spheres: container-functionalities, gas sorption, sensor applications and catalysis H. Gröger, F. Gyger, C. Kind, P. Leidinger, C. Zurmühl, C. Feldmann, Karlsruhe Institute of Technology (KIT)/D	B/799
16:00 - 17:00	FAREWELL	

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ROOM:	Viktor-von-Scheffel-Saal – Level -1	
	ELECTROCHEMICAL ENERGY STORAGE: BATTERIES AND SUPERCAPACITORS	
Chairs:	<i>K.-C. Möller, Fraunhofer ISC, Würzburg/D & M. Winter, University of Münster/D</i>	
09:00 - 09:20	Imaging ionic species in block copolymer electrolytes for solid state battery applications F.I. Allen, Lawrence Berkeley National Laboratory and University of California, CA/USA; M. Watanabe, Lehigh University, Bethlehem, PA/USA; N.P. Balsara, A.M. Minor, Lawrence Berkeley National Laboratory and University of California, CA/USA	B/568
09:20 - 09:40	Magnetron sputtered thin film solid state electrolytes in the materials system Li-V-Si-O with increased ionic conductivity C. Ziebert, A. Knorr, S. Ulrich, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; D. Gerthsen, Karlsruhe Institute of Technology (KIT)/D	B/570
09:40 - 10:00	Interface investigations on all solid state thin film batteries S. Jacke, J. Song, G. Cherkashinin, W. Jaegermann, Technical University Darmstadt/D	B/573
10:00 - 10:20	Polyol synthesis of lithium titanium phosphate nanoparticles for Li-ion-conductive solid electrolyte M. Singh, S. Bouazza, M. Willert-Porada, University of Bayreuth/D	B/576
10:20 - 10:40	Novel electrolytes for batteries and supercapacitors T.F. Beyersdorff, IoLiTec Ionic Liquids Technologies GmbH, Denzlingen/D; M. Taige, T.J.S. Schubert, IoLiTec Ionic Liquids Technologies GmbH, Heilbronn/D	B/577
10:40 - 11:10	COFFEE BREAK	
11:10 - 11:50	KEYNOTE LECTURE Electrolytes for lithium batteries J. Tübke, C. Hupbauer, FhI for Chemical Technology ICT, Pfinztal/D	B/578
11:50 - 12:10	TiO₂ rutile nanowhiskers as negative electrode for Li-ion batteries M. Pfanzelt, P. Kubiak, ZSW-Center for Solar Energy and Hydrogen Research, Ulm/D; T. Fröschl, J. Geserick, N. Hüsing, Ulm University/D; M. Wohlfahrt-Mehrens, ZSW-Center for Solar Energy and Hydrogen Research, Ulm/D	B/581
12:10 - 12:30	New separator material for supercapacitors H.-J. Fischle, WIMA, Berlin/D; D. Busch, B. Schmitz, Treofan Germany GmbH & Co. KG, Neunkirchen/D; S. Winternheimer, HTW Saarland, Saarbrücken/D	B/582
12:30 - 12:50	Microscopic investigations of electrode materials for use in lithium-ion batteries R. Moenig, D. Chen, A. Sedlmayr, M. Kamlah, O. Kraft, Karlsruhe Institute of Technology (KIT)/D	B/583
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
14:00 - 14:20	Insights into Li ion batteries using <i>in-situ</i> neutron powder diffraction N. Sharma, V.K. Peterson, M.M. Elcombe, M. Avdeev, A.J. Studer, Australian Nuclear Science and Technology Organisation (ANSTO), Menai/AUS; N. Kamarulzaman, Universiti Teknologi MARA, Selangor/MAL	B/584
14:20 - 14:40	Carbon encapsulated-Fe LiF nanocomposite as stable electrode material R. Prakash, M. Fichtner, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/587
14:40 - 15:00	Mesosopic modeling and simulation of charge and ion transport in Li-ion battery cells A. Latz, J. Zausch, O. Iliev, Fraunhofer ITWM, Kaiserslautern/D	B/590
15:00 - 15:20	Studies on LiFePO₄ as cathode materials in lithium-ion-batteries T. Chrobak, M. Ender, J. Illig, J.P. Schmidt, D. Klotz, E. Ivers-Tiffée, Karlsruhe Institute of Technology (KIT)/D	B/593
15:20 - 15:40	Electrochemical and thermal modeling for state-of-charge diagnostics of LiFePO₄-based cells W.G. Bessler, C. Hellwig, German Aerospace Center (DLR), Stuttgart/D	B/596
15:40 - 16:00	Physical modeling of carbon nanotube ultracapacitor A. Orphanou, T. Yamada, C. Yang, Santa Clara University, CA/USA	B/597
16:00 - 17:00	FAREWELL	

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ROOM:	Alfred-Mombert-Saal – Level -1	
	CATALYSTS FOR SUSTAINABLE ENERGY APPLICATIONS	
Chair:	<i>J. Ye, National Institute for Materials Science (NIMS), Tsukuba/J</i>	
09:00 - 09:20	Electrooxidation of H₂/CO on carbon-supported PtRuMo nanoparticles for polymer electrolyte fuel cells N. Tsiouvaras, Spanish National Research Council (CSIC), Madrid/E; F. Alcaide, G. Álvarez, CIDETEC-IK4, San Sebastian/E; M.A. Peña, J.L.G. Fierro, M.V. Martínez-Huerta, Spanish National Research Council (CSIC), Madrid/E	B/898
09:20 - 09:40	Catalytic slurry hydrocracking of heavy oil A. Bhattacharyya, B.J. Mezza, M.L. Bricker, L.J. Bauer, D.B. Gillis, UOP Honeywell, Des Plaines, IL/USA	B/901
09:40 - 10:00	Preparation of alumina-supported copper-zinc oxide catalyst by liquid-phase reduction method and development of small hydrogen generator N. Yagihashi, M. Nakaya, A. Muramatsu, Tohoku University, Sendai/J	B/904
10:00 - 10:40	KEYNOTE LECTURE Molecular and nanosized catalysts for the conversion of renewables into energy and chemicals C. Bianchini, Istituto di Chimica dei Composti Organometallici (ICCOM-CNR), Sesto Fiorentino/I	B/907
10:40 - 11:10	COFFEE BREAK	
	MATERIALS RESEARCH FOR SOLID-STATE LIGHTING	
Chairs:	<i>E. Keßnich, BASF Future Business GmbH, Ludwigshafen/D & J. Phillips, Sandia National Laboratories, Albuquerque, NM/USA</i>	
11:10 - 11:50	KEYNOTE LECTURE Transparent OLEDs T. Riedl, Bergische Universität Wuppertal/D; P. Görrn, J. Meyer, Princeton University, NJ/USA; S. Hamwi, T. Winkler, TU Braunschweig/D; M. Kröger, InnovationLab GmbH, Heidelberg/D; H.-H. Johannes, W. Kowalsky, TU Braunschweig/D	B/975
11:50 - 12:10	Field-induced charge carrier separation in stacked OLEDs M. Kröger, Innovation Lab GmbH, Heidelberg/D; J. Meyer, Princeton University, NJ/USA and TU Braunschweig/D; S. Hamwi, TU Braunschweig/D; F. Gnam, Innovation Lab GmbH, Heidelberg/D; T. Riedl, H.-H. Johannes, TU Braunschweig/D; A. Kahn, Princeton University, NJ/USA; W. Kowalsky, TU Braunschweig/D	B/976
12:10 - 12:30	Charge transport in amorphous films of Alq₃ A. Fuchs, C. Lennartz, InnovationLab GmbH, Heidelberg and BASF SE, Ludwigshafen/D; A. Lukyanov, D. Andrienko, MPI for Polymer Research, Mainz/D	B/977
12:30 - 12:50	Light where it should be - application tailored beam-shaping of organic light-emitting diodes D.S. Setz, B.C. Krummacker, K. Heuser, Osram Opto Semiconductors GmbH, Regensburg/D; A. Winnacker, University of Erlangen-Nuremberg/D	B/980
12:50 - 14:00	LUNCH BREAK – Lunch will be available at the conference venue for self-payment	
14:00 - 14:40	KEYNOTE LECTURE Green LEDs for color mixing white light using lattice-mismatched GaInP alloys A.J. Mascarenhas, L. Bhusal, M. Steiner, National Renewable Energy Laboratory, Golden, CO/USA	B/983
14:40 - 15:00	III-nitride nanowires: novel materials for solid-state lighting G.T. Wang, Q. Li, J. Huang, Sandia National Laboratories, Albuquerque, NM/USA; A.A. Talin, Sandia National Laboratories, Livermore, CA/USA; Y. Lin, Sandia National Laboratories, Albuquerque, NM/USA; I. Arslan, Sandia National Laboratories, Livermore, CA/USA; A. Armstrong, Sandia National Laboratories, Albuquerque, NM/USA; P.C. Upadhyay, R.P. Prasankumar, Los Alamos National Laboratory, NM/USA	B/985
15:00 - 15:20	Materials issues with GaN-based blue-green light emitters A. Hangleiter, H. Jönen, A.D. Dräger, T. Langer, H. Bremers, U. Rossow, TU Braunschweig/D	B/987
15:20 - 15:40	Tuning of luminescence in Ln-N-MOFs with the toolbox of rare earth cations and N-donor ligands J.-C. Rybak, A. Zurawski, C.J. Höller, K. Müller-Buschbaum, University of Munich/D	B/988
15:40 - 16:00	Photoluminescent nanoparticle surfaces A. Sternig, M. Müller, S. Stankic, E. Knözinger, J. Bernardi, Vienna University of Technology/A; O. Diwald, University of Erlangen-Nuremberg/D	B/989
16:00 - 17:00	FAREWELL	

The Poster Session 1 will take place on Monday, July 5, from 5:50 p.m. till 8:00 p.m., the Poster Session 2 will take place on Wednesday, July 7, from 5:50 p.m. till 08:00 p.m.. The authors are expected to be present during the Poster Sessions.

BUILDING MATERIALS AND SYSTEMS FOR CONSTRUCTION

A.01	IR reflectivity with mirror like pigments - an alternative approach for energy savings <u>P. Wisling</u> , M. Greb, Eckart GmbH, Velden/D	B/829
A.02	Alternative reinforcing materials for sustainable concrete construction <u>M.F. Montemor</u> , L. Freire, Instituto Superior Tecnico, Lisboa/P; M.J. Carmezim, EST Setúbal/P	B/830
A.03	Low CO₂ emission construction material developed by geo-polymerization of inorganic sludges <u>Z.X. Yang</u> , J.M. Zhao, K.H. Hwang, Gyeongsang National University, Jinju/ROK; H. Kim, Seoul National University/ROK	B/833

CATALYSTS FOR SUSTAINABLE ENERGY APPLICATIONS

B.01	Steam reforming of ethanol on zinc based spinels <u>S. Sieradzka</u> , J. Trawczynski, Wroclaw University of Technology/PL; A.C. Roger, Université de Strasbourg/F	B/910
B.02	Nanoporous alumina films formed in an electrolyte containing fluoride ions <u>C. Girginov</u> , M. Bojinov, University of Chemical Technology and Metallurgy, Sofia/BG	B/913
B.03	On spin catalysis effect in selected industrial processes <u>O. Khavryuchenko</u> , Kyiv National Taras Shevchenko University/UA; V.D. Khavryuchenko, National Academy of Sciences of Ukraine, Kyiv/UA; V.V. Lisnyak, Kyiv National Taras Shevchenko University/UA	B/916
B.04	Ni_xAl_{3-y} hydrotalcites derived catalysts for methane dry reforming reaction F. Touahra, Z. Abdessadek, A. Saadi, USTHB University, Alger/DZ; K. Bachari, Centre de Recherches Scientifiques (CRAPC), Alger/DZ; O. Cherifi, D. Halliche, USTHB University, Alger/DZ	B/919
B.05	Catalytic activity improvement of Ni₃Al foils by oxidation-reduction pretreatment <u>J.H. Jang</u> , Korea Advanced Institute of Science and Technology, Daejeon/ROK; Y. Xu, M. Demura, NIMS, Tsukuba/J; D.M. Wee, Korea Advanced Institute of Science and Technology, Daejeon/ROK; T. Hirano, NIMS, Tsukuba/J	B/922
B.06	New materials for biodiesel production: the use of MgAl hydrotalcites solid catalysts <u>J.F. Gomes</u> , <u>J.F. Puna</u> , L. Gonçalves, ISEL - Instituto Superior de Engenharia de Lisboa/P; J.C. Bordado, Institute of Biotechnology and Bioengineering - IST, Lisboa/P; M.J.N. Correia, Chemical Process Centre - IST, Lisboa/P	B/924
B.07	Catalytic study of some clay hybrid materials <u>T. Choudhury</u> , National Institute of Foundry and Forge Technology, Ranchi/IND; N.M. Mishra, Indian School of Mines University, Dhanbad/IND	B/927
B.08	Selectivity and stability for catalytic partial oxidation of ethanol to synthesis gas <u>M. Breite</u> , M. Jahn, D. Männel, A. Weder, A. Michaelis, FhI for Ceramic Technologies and Systems, Dresden/D	B/928
B.10	Electrochemical reduction of carbon dioxide on Ni modified composite electrodes I.-H. Liu, W.-S. Chang, <u>C.-C. Yang</u> , Industrial Technology Research Institute, Hsinchu/RC	B/931
B.11	In-situ analysis of moving reaction fronts for the bistable CO oxidation reaction on noble metal catalyst <u>D. Schmeißer</u> , S. Müller, K. Henkel, K. Müller, Brandenburg University of Technology, Cottbus/D; St. Wehner, University of Koblenz-Landau, Koblenz/D	B/932

ELECTROCHEMICAL ENERGY STORAGE: BATTERIES AND SUPERCAPACITORS

C.01	Thermal characterization of Li-ion high power cells <u>T. Wetzel</u> , Y. Wang, Karlsruhe Institute of Technology/D	B/600
C.02	Ionic liquid additives for Li ion battery electrolytes <u>S. Sachnov</u> , P.S. Schulz, P. Wasserscheid, University of Erlangen-Nürnberg/D	B/602
C.03	Ordered mesoporous carbide-derived carbon as new high performance electrode material in supercapacitors <u>M. Rose</u> , S. Kaskel, Dresden University of Technology/D; Y. Korenblit, G.N. Yushin, Georgia Institute of Technology, Atlanta, GA/USA	B/604
C.04	Synthesis and characterization of carbon nanostructures/LiFePO₄ composites as cathodes for Li-ion batteries C. Spanheimer, L. Dimesso, J.-C. Jaud, S. Jacke, J. Song, S. Bhuvaneswari, C. Förster, W. Jägermann, Darmstadt University of Technology/D	B/607

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C.05	Application of air as ion source in metal oxide pseudo-capacitors <u>I. Kiselev</u> , M. Sommer, Karlsruhe Institute of Technology (KIT)/D	B/610
C.06	Mixed metal fluorides as solid state electrolyte in battery application <u>D. Wang</u> , M. Anji Reddy, V. Sepelák, H. Hahn, M. Fichtner, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/611
C.07	Electrochemical cells with fluoride conducting electrolytes <u>M. Anji Reddy</u> , D. Wang, H. Hahn, M. Fichtner, Karlsruhe Institute of Technology (KIT)/D	B/614
C.08	Lithium insertion properties of CuCr₂Se₄ <u>H. Hain</u> , S. Indris, R. Moenig, D. Chen, H. Gesswein, P. Gruber, Karlsruhe Institute of Technology (KIT)/D; W. Bensch, J. Ophey, Universität Kiel/D	B/615
C.09	Development of nanocomposites for anode material in Li-ion batteries <u>R. Ochs</u> , S. Schlabach, D.V. Szabo, S. Indris, S. Becker, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/618
C.10	A novel synthesis method for CoF_x based cathode materials <u>C. Wall</u> , R. Prakash, H. Hahn, M. Fichtner, Karlsruhe Institute of Technology (KIT)/D	B/619
C.11	Preparation, characterization and simulation studies of carbon nanotube electrodes for electrochemical energy storage <u>F. Meissner</u> , I. Endler, FhI for Ceramic Technologies and Systems, Dresden/D; L. Pastewka, FhI for Mechanics of Materials, Freiburg/D; H. Lorrmann, FhI for Silicate Research, Würzburg/D	B/622
C.12	Laser-based technologies for synthesis and processing of advanced LIB materials <u>R. Kohler</u> , W. Pfleging, M. Bruns, C. Ziebert, M. Rohde, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; M. Przybylski, ATL Lasertechnik GmbH, Wermelskirchen/D	B/625
C.13	Electrode materials for lithium-ion batteries characterized by Electrochemical Impedance Spectroscopy <u>N. Schweikert</u> , Karlsruhe Institute of Technology (KIT)/D; S. Krüger, B. Roling, University of Marburg/D; S. Indris, Karlsruhe Institute of Technology (KIT)/D	B/628
C.14	Ca₂SnO₄: mechanosynthesis, nonequilibrium structure, and electrochemical behavior <u>S.M. Becker</u> , V. Sepelák, Karlsruhe Institute of Technology (KIT)/D; I. Bergmann, Volkswagen AG, Wolfsburg/D; M. Scheuermann, A. Ulrich, H. Hahn, S. Indris, Karlsruhe Institute of Technology (KIT)/D	B/630
C.15	Property studies of ionic liquid for use as a safety electrolyte for Li-cell <u>B. Li</u> , T. Hanemann, J. Hausselt, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; T. Schubert, IoLiTec Ionic Liquids Technologies GmbH, Denzlingen/D; M. Schulz, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/633
C.16	Lithium-sulfur batteries <u>M. Hagen</u> , J. Tübke, T. Berger, FhI for Chemical Technology, Pfinztal/D	B/634
C.17	Influence of carbon nanomaterial on morphology and electrochemical properties of carbon-fiber-silicon-nanocomposites for application as lithium ion battery anode <u>H. Wolf</u> , <u>K. Mees</u> , Z. Pajkic, University of Bayreuth/D; E. A. Aksentov, H. J. Rada R&D Europe (Deutschland) GmbH, Offenbach/D; M. Willert-Porada, University of Bayreuth/D	B/636
C.18	Manganese oxide nanocomposite supercapacitor electrodes <u>T.C. Monson</u> , T.E. Stevens, D.L. Huber, Sandia National Laboratory, Albuquerque, NM/USA	B/637
C.19	Composite electrodes for electrochemical supercapacitors <u>J. Li</u> , G. Moses Jacob, Y. Wang, I. Zhitomirsky, McMaster University, Hamilton/CDN; Q.M. Yang, Inco Ltd., Mississauga/CDN	B/638
C.20	Electrodeposition of composite materials for electrochemical supercapacitors <u>G. Moses Jacob</u> , Y. Wang, J. Li, I. Zhitomirsky, McMaster University, Hamilton/CDN	B/639
C.21	Low temperature synthesis of LiFePO₄ nanoplates and their electrochemical properties <u>M. Singh</u> , M. Willert-Porada, University of Bayreuth/D	B/640
C.22	Surface science investigations of SEI layer in Li-ion battery cathodes: oxidation states and surface reactions <u>G. Cherkashinin</u> , D. Ensling, S. Schmid, S. Bhuvaneswari, J. Song, S. Jacke, W. Jaegermann, Darmstadt University of Technology/D; K. Nikolowski, H. Ehrenberg, IFW Dresden/D	B/641
C.23	Influence of carbon coating on the electrochemical performance of lambda-MnO₂ electrode for supercapacitors <u>A. Polaczyk</u> , Poznan University of Technology/PL and Institut de Sciences des Matériaux de Mulhouse/F; C. Vix-Guterl, Institut de Sciences des Matériaux de Mulhouse/F; E. Frackowiak, Poznan University of Technology/PL	B/642
C.24	Effects of Al and F co-doping on LiNi_{0.5}Mn_{1.5}O₄ spinel materials as cathode for 5V lithium rechargeable batteries <u>S. Glatthaar</u> , H. Gesswein, M. Schön, M. Schroeder, J.R. Binder, J. Haußelt, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/645
C.25	V₂O₅ as cathode material for Mg secondary batteries <u>W. Lohstroh</u> , Ph. Leufke, H. Hahn, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D	B/646

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C.26	Directed synthesis of complex phosphates for lithium-ion batteries electrolytes A. Potapova, A. Novoselov, Lomonosov Moscow State Academy of Fine Chemical Technology/RUS; S. Stefanovich, Lomonosov Moscow State University/RUS; G. Zimina, Lomonosov Moscow State Academy of Fine Chemical Technology/RUS	B/649
C.27	Novel polymer electrolytes for lithium ion batteries based on cross linked polysiloxanes S. Kloss, A.-C. Gentschev, M. Hiller, A. Hoffmann-zu Höne, S. Jeschke, M. Kogel, T. Schürmann, R. Stolina, M. Burjanadze, H.-D. Wiemhöfer, Universität Münster/D	B/650
C.28	Characterization of novel polymer electrolytes with enhanced thermal and electrochemical stability M. Hiller, M. Burjanadze, A.-C. Gentschev, A. Hoffmann-zu Höne, S. Jeschke, S. Kloss, M. Kogel, T. Schürmann, R. Stolina, H.-D. Wiemhöfer, Universität Münster/D	B/653
C.29	Low loss/high dielectric constant carbon nanotube / polymer composites for energy storage application J. Nunes Pereira, P. Costa, J. Silva, V. Sencadas, J.G. Rocha, S. Lanceros-Mendez, Universidade do Minho, Braga/P	B/656
C.30	Ab-initio simulation of Li migration in $Li_x(Co,Ni)O_2$ ($0 < x < 1$) - LIPO/LIPON based cathode-electrolyte interface systems P.C. Schmidt, W. Jaegermann, TU Darmstadt/D; M. Christensen, Materials Design, Stockholm/S; C. Freeman, Materials Design, San Diego, CA/USA; A. Mavromaras, Materials Design, Stockholm/S; P. Saxe, Materials Design, Angel Fire, NM/USA; E. Wimmer, Materials Design, Le Mans/F; W. Wolf, Materials Design, Klosterneuburg/A	B/659
C.31	Vertical aligned carbon nanotube deposition on metallic substrates for supercapacitor electrodes S. Dörfler, H. Althues, S. Kaskel, FhI for Material and Beam Technology (IWS), Dresden/D	B/662
C.32	Ionic liquids based electrolytes for application in Li-ion batteries N.V. Ignatiev, M. Schmidt, A. Amann, W.-R. Pitner, M. Schulte, Merck KGaA, Darmstadt/D	B/663
C.33	New separator material for supercapacitors H.-J. Fischle, WIMA, Berlin/D; D. Busch, WIMA, Berlin/D; S. Winterheimer, HTW Saarland, Saarbrücken/D	B/664
C.34	Electrode materials for vanadium redox flow batteries J. Noack, K. Pinkwart, J. Tübke, FhI for Chemical Technology (ICT), Pfanztal/D	B/665
C.35	Titanates for electrical storage J. Kallioinen, J. Kuusivaara, R. Lamminmäki, Sachtleben Pigments Oy, Pori/FIN	B/666

HIGH-THROUGHPUT TECHNOLOGIES FOR ENERGY MATERIALS

D.01	Gas-phase synthesis of highly specific nanoparticles on the pilot-plant scale M. Spree, T. Huelser, Institute of Energy and Environmental Technology (IUTA e.V.), Duisburg/D; C. Schulz, H. Wiggers, University of Duisburg-Essen, Duisburg/D	B/995
D.02	High throughput methanol oxidation and structural characterization of nanoparticle catalyst composition spreads A.E. Legard, J.M. Gregoire, M.E. Tague, R.B. van Dover, H.D. Abruna, F.J. DiSalvo, Cornell University, Ithaca, NY/USA	B/996
D.03	Structural design of surface materials in mitigation of fouling – induction of crystal growth E. Puhakka, VTT Technical Research Centre of Finland, Espoo/FIN; M. Riihimäki, R. Keiski, University of Oulu/FIN	B/997
D.04	Surface damage effects in ultrasonic cleaning of silicon wafers A. Nadtochiy, A. Podolian, O. Korotchenkov, D. Kalinichenko, L. Steblenko, Kyiv National University/UA; J. Schmid, E. Kancsar, V. Schlosser, University of Vienna/A	B/1000

HYDROGEN STORAGE

E.01	Development of new materials for hydrogen production and storage using thin film high-throughput methods A. Ludwig, V. Vidyarthi, M. Kieschnick, R. Meyer, A. Savan, S. Thienhaus, Ruhr-Universität Bochum/D	B/748
E.03	The function of $LiBH_4$ in the Li-Mg-N-H hydrogen storage systems J.J. Hu, M. Fichtner, Karlsruhe Institute of Technology (KIT), Eggenstein-Leopoldshafen/D; E. Weidner, JRC Institute for Energy, Petten/NL	B/749
E.04	Pressure resistance of glass capillary structures for gas storage purposes M. Beckmann-Kluge, K. Holtappels, H. Krause, P. Ried, BAM Federal Institute for Materials Research and Testing, Berlin/D; D. Eliezer, C.En Ltd., Zurich/CH	B/752
E.05	Effect of activation processes on intermetallic dynamic hydrogen storage materials S.S. Makridis, E.S. Kikkiniades, University of Western Macedonia, Kozani/GR; A.K. Stubos, NCSR „Demokritos“, Athens/GR	B/755
E.06	Room-temperature hydrogen generation by core-shell structured catalysts for chemical hydrogen storage H. Jiang, Q. Xu, National Institute of Advanced Industrial Science and Technology (AIST), Ikeda, Osaka/J	B/756

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E.07	Safety importance measures for a conceptual baseline design of an on-board reversible hydrogen storage system Y.F. Khalil, United Technologies Research Center, East Hartford, CT/USA; M. Modarres, University of Maryland, College Park, MD/USA	B/759
E.08	Porous organic polymers (POPs) for hydrogen storage S. Yuan, B. Dorney, S. Kirklin, D. White, D. Liu, Argonne National Laboratory, IL/USA; J. Xia, Z. Wang, L. Yu, The University of Chicago, IL/USA	B/761
E.09	Energy and kinetics of the hydrolysis reaction of borohydrides L. Damjanovic, S. Bennici, A. Auroux, IRCELYON, Villeurbanne/F	B/764
E.10	New perspectives in the characterization of hydrogen sorption. Applications in solid hydrogen-storage, catalytical reactions for fuel cells. E. Wirth, R. André, P. Le Parlouër, Setaram Instrumentation, Caluire/F; A. Levchenko, Setaram Inc., Newark, CA/USA	B/767
E.11	Analysis of deformation twins and the partially dehydrogenated microstructure in nanocrystalline magnesium hydride (MgH_2) powder M. Danaie, University of Alberta, Edmonton/CDN; S.X. Tao, Eindhoven University of Technology/NL; P. Kalisvaart, D. Mitlin, University of Alberta, Edmonton/CDN	B/770
E.12	Reversibility aspect of lithium borohydrides M. Au, Savannah River National Laboratory, Aiken, SC/USA; Y. Sun, Clemson University, SC/USA	B/771
E.13	Hydrogen sorption cycling kinetic stability and microstructure of Single-Walled Carbon Nanotube (SWCNT) magnesium hydride (MgH_2) nanocomposites B. Shalchi Amirkhiz, M. Danaie, University of Alberta and NINT NRC, Edmonton/CDN; M. Barnes, B. Simard, Steacie Institute for Molecular Sciences (SIMS) NRC, Ottawa/CDN; D. Mitlin, University of Alberta and NINT NRC, Edmonton/CDN	B/772
E.14	Synthesis and characterization of layered $FePS_3$ for hydrogen uptake N. Ismail, A.A. El-Meligi, M.A. Badr, National Research Center in Cairo, Giza/ET; Y.M. Temerk, Assiut University/ET; M. Madian, National Research Center in Cairo, Giza/ET	B/773
E.15	New Europium- and Strontium alanates: crystal structures and decomposition properties A. Wosylus, A. Pommerin, M. Felderhoff, F. Schüth, C. Weidenthaler, MPI für Kohlenforschung, Mülheim an der Ruhr/D	B/776

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LIGHT-WEIGHT STRATEGIES, CONCEPTS, DESIGN, MATERIALS, PROCESSES AND METHODS

F.01	Flexibility in the new and innovative direct process for compression moulded composite parts T. Potyra, D. Schmidt, F. Henning, P. Elsner, FhI for Chemical Technology, Pfanztal/D	B/963
F.02	Comparative evaluation over the self-healing effect of hybrid nano-composite pre-treatments S. Kozhukharov, E. Matter, University of Chemical Technology and Metallurgy, Sofia/BG	B/966
F.03	Microstructural evolution and mechanical properties of nano intermetallic phase dispersed $Al_{65}Cu_{20}Ti_{15}$ amorphous matrix composite synthesized by mechanical alloying and hot isostatic pressing D. Roy, National Institute of Foundry and Forge Technology, Ranchi/IND; R. Mitra, Indian Institute of Technology, Kharagpur/IND; O.A. Ojo, University of Manitoba, Winnipeg/CDN; W. Lojowski, Institute of High Pressure Physics, Warszawa/PL; I. Manna, Indian Institute of Technology, Kharagpur/IND	B/969
F.04	Unique nanopore templates by focused ion beam guided anodization K. Lu, B. Chen, Virginia Polytechnic Institute and State University, Blacksburg, VA/USA	B/970
F.05	Surface texturization on (100) silicon for reflectance reduction C. Wei, J.M. Chen, Y.H. Chien, Tatung University, Taipei/RC	B/971
F.06	The effect of isopropyl alcohol on the reflection loss for single crystalline silicon C. Wei, J.M. Chen, Y.H. Chien, Tatung University, Taipei/RC; F.C. Tai, National TsingHua University, Hsinchu/RC	B/972

MATERIALS FOR ENERGY APPLICATIONS

G.02	Predicting the long term corrosion behavior of pipe steels used at the CCS-site Ketzin, Germany in laboratory CO_2 -saturated saline aquifer CCS-environment A. Pfennig, B. Linke, HTW Applied University Berlin/D; A. Kranzmann, BAM Federal Institute of Materials Research and Testing, Berlin/D	B/1005
G.03	Characterization of transport properties on SPEEK-CNT composites M. Schieda, GKSS Research Centre Geesthacht GmbH/D; S. Nunes, King Abdullah University of Science and Technology, Thuwal/SAR	B/1008
G.04	In-situ electrochemical corrosion testing of zirconium alloys in high temperature power cycle environment J. Macák, Institute of Chemical Technology, Prague/CZ; R. Novotný, Joint Research Centre, Petten/NL; P. Sajdl, Institute of Chemical Technology, Prague/CZ	B/1009

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G.05	Alumina coatings against carburization and oxidation under oxyfuel conditions W. Schulz, M. Feigl, E. Piedra, I. Dörfel, R. Saliwan-Neumann, G. Oder, M. Nofz, A. Kranzmann, Federal Institute for Materials Research and Testing, Berlin/D	B/1012
G.06	COORAL – first results of screening corrosion tests under simulated CCS conditions S. Simon, D. Bettge, S. Bohraus, A. Kranzmann, Federal Institute for Materials Research and Testing, Berlin/D	B/1015
G.07	Synthesis of 1-d, 2-d, 3-d structures based on fullerenes on the surface of semiconductors V.M. Ogenko, O.V. Naboka, G.Ya. Kolbasov, I.A. Rusetskii, I.A. Slobodyanyuk, V.I. Vernadskii Institute of General and Inorganic Chemistry of the NAS of Ukraine, Kyiv/UA	B/1018
G.08	Properties of Ba doped transparent p-type SrCu₂O₂ thin films deposited by PLD process J.Y. Lee, D.K. Shin, J.H. Shin, H.Y. Lee, Yeungnam University, Gyongsan/ROK	B/1019
G.09	200 MeV Ag⁺ ion beam induced modifications in AgInSe₂ films deposited by hot wall vacuum evaporation method D. Pathak, R.K. Bedi, Guru Nanak Dev University, Amritsar/IND; D. Kaur, Indian Institute of Technology, Roorkee/IND; R. Kumar, Inter University Accelerator Centre, New Delhi/IND	B/1020
G.10	Photothermal laser processing of thin silicon nanoparticle films: prospects in photovoltaic applications D. Behrenberg, C. Rier, H. Karacuban, N. Benson, H. Wiggers, R. Schmechel, H. Nienhaus, D. Jäger, N. Hartmann, Universität Duisburg-Essen, Essen/D; P. Harten, D. Hauschild, LIMO GmbH, Dortmund/D	B/1021
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