

## Poster presentations • Monday, 4 September & Thursday, 7 September 2017

### Posters

Posters are to be displayed for the entire conference in the Poster Exhibition. Authors are kindly requested to set up their poster on the corresponding board with the supplied material on Monday, 4th September before 10:00. Poster boards have the same number as the titles in the Conference Programme.

The poster session for **odd** numbers, e.g. P1, P3, P5 etc. will be held on Monday, 4<sup>th</sup> September from 16:30 to 18:30.

The poster session for **even** numbers, e.g. P2, P4, P6 etc. will be held on Thursday, 7<sup>th</sup> September from 15:00 to 17:00.

Poster presenters are kindly requested to be present during their poster sessions.

Poster boards are made from cork and their size is 980 mm x 1220 mm. The posters should not be laminated. Mounting materials will be provided on-site.

### Best Poster Award

The Best Poster Award is sponsored by 55<sup>th</sup> EHPRG Meeting Organizing Committee. The Award presentation ceremony will be held during the Closing Ceremony. All Authors who would like to participate in the competition can get a sticker at the Registration Desk to mark their posters.

#### S 1 – High-pressure chemistry

P1

Modification of structure and physical properties of  $\text{MgB}_2$  superconductor due to synthesis under 1 GPa pressure

Tomasz Cetner (Warsaw/Poland), Andrzej Morawski, Akiyasu Yamamoto, Ryszard Diduszko

P2

High-pressure synthesis, structure and equation of state of new tetragonal boron subnitride  $\text{B}_{50}\text{N}_2$

Kirill Cherednichenko (Villetaneuse/France), Vladimir Solozhenko

P3

Topology of the chemical pressure field in simple molecules

Mikhail Pokryvaylo (Oviedo/Spain), Hussien Osman, Miguel Ángel Salvadó, J. Manuel Recio

P4

What can we learn from chemical pressure maps of metals and ionic crystals?

Alvaro Lobato (Madrid/Spain), Hussien Osman, Miguel Angel Salvado, Mercedes Taravillo  
Valentin Garcia Baonza, Jose Manuel Recio Muñiz

P5

Formation and behavior of metal hydrides at extreme p,T: In situ PXRD studies at ID06-LVP, ESRF

Kristina Spektor (Grenoble/France), Wilson Crichton, Ulrich Häussermann, Sumit Konar

P6

Experimental evidence for stable crystalline polymeric carbon dioxide at lowermost mantle conditions

Kamil Dziubek (Florence/Italy), Martin Ende, Demetrio Scelta, Roberto Bini, Mohamed Mezouar, Gaston Garbarino, Ronald Miletich

P7

Flexible amines – a new route for designing advanced, porous materials

Aleksandra Półrolniczak (Poznan/Poland), Szymon Sobczak, Andrzej Katrusiak

## S 2 – New phenomena at high pressure

P8

Metallization of erbium and yttrium trihydrides under high pressure

Marek Tkacz (Warsaw/Poland), Mikhail Kuzovnikov, Mikhail Eremites, Aleksander Drozdov, Stanislav Besedin

P9

Pressure-induced conformational conversion in p-tolyl disulfide at phase transition and in a hidden polymorph

Szymon Sobczak (Poznan/Poland), Andrzej Katrusiak

P10

Properties of YbAu<sub>2</sub>Si<sub>2</sub> under hydrostatic pressure

Jiří Kaštil (Prague/Czech Republic), Kristina Vlášková, Jiří Prchal, Martin Míšek, Jiří Kamarád, Zdeněk Arnold

## S 3 – Amorphous materials and liquids under pressure

P11

Hydrogen content and Raman spectra of amorphous magnesium silicates with Mg/Si from 0 to 0.9 hydrogenated at high pressure.

Vadim Efimchenko (Moscow/Russia), Nikolay Barkovskii, Vladimir Fedotov, Konstantin Meletov, Kirill Khryapin

## S 4 – Elements and binary alloys under pressure: structural and electronic transformations

P12

Raman study of bismuth at high pressure

Julien Haines (Montpellier/France)

P13

Boron monosulfide: equation of state and pressure-induced phase transition

Kirill Cherednichenko (Villetaneuse/France), Ivan Kruglov, Artem Oganov, Yann Le Godec, Mohamed Mezouar, Vladimir Solozhenko

P14

Pressure induced elimination of ferro-ferro transition in  $\text{Sc}_{0.35}\text{Ti}_{0.65}\text{Fe}_2$  intermetallic compound

Zdenek Arnold (Prague/Czech Republic), Martin Misek, Olivier Isnard, J. Pemeja, Jiri Kastil, Jiri Kamarad

P15

High pressure phase diagram of sulphur from laser-heated diamond anvil cell experiments

Hannah B. Scott (Edinburgh/Great Britain), Tomoaki Kimura, R. Stewart McWilliams

## S 5 – Materials chemistry at high pressure

P16

Synthesis by sol gel route, structural and dielectric characterization of cerium doped lead zirconium titanate

El Miloudi El Moussafir (Casablanca/Maroko)

P17

Phosphorus doping in (111) face of single crystal diamond grown by the temperature gradient HPHT method

Sergei Buga (Moscow/Russia), Vitaly Bormashov, Jullien Bargon, Michail Kuznetsov, Sergei Terentiev, Sergei Tarelkin, S Temgoua, Vladimir Blank

P18

Post-spinel transition in hausmannite determined by high P-T in situ X-ray diffraction

Jolanta Darul (Poznan, Poland), Christian Lathe, Pawel Piszora

P19

Crystal packing diversity of the simple amidinate oxozinc complex derived by non-covalent interactions

Michał Terlecki (Warsaw/Poland), Michał Leszczyński, Szymon Sobczak, Iwona Justyniak, Andrzej Katrusiak, Janusz Lewiński

P20

Dimerization in the III-V semiconductor gallium phosphide

Barbara Lavina (Las Vegas, USA)

P21

High pressure magnetic characterisation of the elpasolite  $\text{La}_2\text{NiMnO}_6$

Christopher Ridley (Didcot/Great Britain), Nicholas Funnell, Craig Bull

P23

Pressure-induced broadening of photoluminescence from Bismuth-doped glasses

John Proctor (Salford/Great Britain), Robert McMaster, Malik Hakeem, Mark Hughes

## S 6 – Superconductivity under high pressure: Experiment and theory

P24

Development of a symmetric miniature diamond anvil cell for magnetic measurements in a SQUID magnetometer and structural studies.

Bastien Guigue (Paris/France)

P25

Pressure – induced metallization and superconductivity in the transition metal dichalcogenides  $\text{MX}_2$

Moaz ElGhazali (Dresden/Germany)

P26

Strong electron-phonon and band structure effects in the optical properties of superconducting hydrogen

Miguel Borinaga (Donostia-San Sebastian/Spain), Julen Ibañez-Azpiroz, Aitor Bergara, Ion Errea

P27

Formation process of high- $T_c$  phase of sulfur hydride

Mari Einaga (Toyonaka, Japan), Masafumi Sakata, Akiyoshi Masuda, Harushige Nakao, Katsuya Shimizu, Alexander Drozdev, Mikhail Erements, Saori Kwaguchi, Naohisa Hirao, Yasuo Ohishi

## S 7 – Critical and supercritical fluids under pressure

P28

High pressure processing for the pharmaceutical compounds using the supercritical fluid technology

Yan-Ping Chen (Taipei/Taiwan), Chun-Hao Fang, Chun-Ta Chen, Muoi Tang, Sheau-Ling Ho

P29

High pressure synthesis of a temperature and pH-sensitive copolymer using the supercritical fluid technology

Muoi Tang (Taipei/Taiwan), Sheau-Ling Ho, Yan-Ping Chen

## S 8 – High pressure structural analysis and (meta)data deposition

P30

DAC-XRD: Data management and processing framework for high-pressure X-ray diffraction experiments with diamond anvil cells

Anna Makal (Warsaw/Poland), Jaroslaw Kalinowski

P31

Synthesis, characterization, crystal structure determination and theoretical study of some new rhenium(I)-tricarbonyl complexes with 2,2'-bipyridine and 2,9-dimethylphenanthroline ligands

Fatemeh Safari (Tehran,Iran)

## S 9 – High-pressure instrumentation

P32

Electric discharge machine for drilling diamond anvil cell gasket holes

John Proctor (Salford/Great Britain), Daniel Massey, Stuart Astin

## S 10 – New techniques at large scale facilities

P33

Melting dynamics of water ices in the mesoscopic regime

Naomi Falsini (Florence/Italy), Margherita Citroni, Samuele Fanetti, Paolo Foggi, Roberto Bini

## S 11 – Porous framework under pressure

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Three polymorphous crystals with large channel network studied by SXRD

Tamás Holczbauer (Budapest/Hungary), Dániel Vajk Horváth, Petra Bombicz, Tibor Soós

## S 12 – High pressure crystallographic studies

P35

High-pressure study of the crystal structure of disodium 2-amino-6-oxo-6,7-dihydro-1H-purine-1,7-diide heptahydrate

Anna Gaydamaka (Novosibirsk, Russia), Sergey Arkhipov, Boris Zakharov, Yuriy Seryotkin, Elena Boldyreva

P36

Compressed interactions and properties of methylamines

Marcin Podsiadło (Poznan/Poland), Anna Olejniczak, Andrzej Katrusiak

P37

Pressure dependence of an unusual structural transition in a molecular Spin-CrossOver compound revealed by Powder X-ray Diffraction under pressure

Elodie Tailleur (Bordeaux/France), Mathieu Marchivie, Jean-Paul Itie, Philippe Guionneau

P38

High-pressure structures of meta-dichlorobenzene and dibromobenzen

Karolina Kwaśna (Poznan/Poland), Michalina Anioła, Weizhao Cai, Andrzej Katrusiak

P39

High-pressure preference for the low Z' polymorph of a molecular crystal

Kinga Roszak (Poznan/Poland), Anna Katrusiak, Andrzej Katrusiak

P40

Giant anomalous strain between high-pressure phases and the mesomers of urea

Kinga Roszak (Poznan/Poland), Andrzej Katrusiak

P41

Pressure effect on the complication of crystal structures the case study on 6-chloro-4,4,5,7-tetramethyldihydrocoumarin

Ida Bukalska (Poznan/Poland), Kacper Rajewski, Andrzej Katrusiak

P42

High-pressure polymorphism of 4,4'-bipyridine perchlorate

Michalina Anioła (Poznan/Poland), Andrzej Katrusiak

P43

Disappearing polymorphs of 2,4,5-triiodoimidazole

Kacper Wojciech Rajewski (Poznan/Poland), Michał Andrzejewski, Andrzej Katrusiak

P44

High pressure studies of 4,5 – dichloroimidazole

Karolina Fercz (Poznan/Poland), Kacper Rajewski, Andrzej Katrusiak

P45

Solvent-effect for the stability and compression of a noncovalent porous material WUT-Ni

Karolina Fercz (Poznan/Poland), Kacper Rajewski, Katarzyna Sołtys, Andrzej Katrusiak

P46

Pressure effect on the arene-perfluoroarene interaction

Alexandra Friedrich (Wuerzburg/Germany), Krzysztof Radacki, Javier Ruiz-Fuertes, Ines E. Collings, Daniel Sieh, Todd B. Marder

P47

Halogen and hydrogen bonds in compressed pentachloroethane

Marcin Podsiadło (Poznan/Poland), Maciej Bujak, Andrzej Katrusiak

P48

High pressure behavior of  $[\text{Co}(\text{NH}_3)_5\text{NO}_2]\text{Br}_2$  as a member of photosalient cobalt(III)

Boris Zakharov (Novosibirsk/Russia), A.S. Marchuk, Elena Boldyreva

### S 13 – Synchrotrons and neutron high-pressure facilities

P49

Opportunities for high-pressure science at the European Spallation Source

Malcolm Guthrie (Lund/Sweden), Arno Hiess

P50

Towards resonant X-ray scattering at high pressure: strategy and first results

Isabel Povedano (Edinburgh/Great Britain), Daniel Porter, Konstantin Kamenev, Alessandro Bombardi

### S 14 – Pressure induced quantum criticality and novel emergent phases

P51

Magnetism of  $\text{U}_4\text{Ru}_7\text{Ge}_6$  under high pressures

Martin Míšek (Prague/Czech Republic), Jan Prokleška, Michal Vališka, Petr Proschek, Jaroslav Valenta, Jiří Kaštil, Jiří Kamarád, Martin Diviš, Vladimír Sechovský

### S 15 – High-pressure spectroscopy and structural studies of new materials

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Aniline-derived arrays polymerized at high-pressure and high-temperature

Marcelo Nobrega (São Paulo/Brazil), Erico Teixeira-Neto, Andrew Cairns, Marcia Temperini, Roberto Bini

P53

High-pressure structural and optical properties of organometal halide perovskites

Kai Wang (Changchun/China)

P54

Unusual structural transition in  $\text{CaCo}_3\text{V}_4\text{O}_{12}$  double perovskite under high pressure

Sergey Ovsyannikov (Bayreuth/Germany)

P55

High-pressure phase of scintillating cadmium tungstate

Daniel Errandonea (Valencia/Spain) Javier Ruiz-Fuertes, A. Friedrich, A. Segura, W. Morgenroth, P. Rodriguez-Hernandez, A. Muñoz, Y. Meng

P56

Stability of the benzene molecule to above 50 GPa at 300 K

John Proctor (Salford/Great Britain), Saba Shaikh, Francis Barber, Malik Hakeem

P57

Kevlar® fibres under hydrostatic pressure by means of Raman spectroscopy

Dimitris Christofilos (Thessaloniki/Greece)

P58

High pressure Raman and photoluminescence studies of  $\text{In}_x\text{Al}_{1-x}\text{N}$  alloys

Dimitris Christofilos (Thessaloniki/Greece)

P59

The possibility of new multiple calcium polyhydride structural phases synthesized under high pressure and high temperature

Takaki Muramatsu (Bristol/Great Britain), Muhtar Ahart, Maddury Somayazulu, Russell Hemley

P60

Ab initio theoretical study of rare-earth orthophosphates  $\text{APO}_4$  (with  $A=\text{La}$ ,  $\text{Sc}$ , and  $\text{Y}$ ) under pressure

Andres Mujica (La Laguna/Spain), Silvana Radescu, Javier Lopez-Solano, Placida Rodriguez-Hernandez, Alfonso Muñoz

## S 16 – Theoretical prediction of high-pressure phases

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Dynamical and elastic properties of  $\text{MgSO}_4$  under high pressure from ab initio simulations

Alejandro Jorge-Montero (La Laguna/Spain), Plácida Rodríguez-Hernández, Alfonso Muñoz

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Structural and electronic properties of  $\text{WX}_2$  dichalcogenides at high pressure

Oto Kohulák (Bratislava/Slovakia), Roman Martoňák

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Structural evolution of amorphous polymeric nitrogen from ab initio simulations

Dominika Vlčková (Bratislava/Slovakia), Oto Kohulák, Dušan Plašienka, Roman Martoňák

## S 17 – Shock experiments and ultra-high pressure generation

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Diffraction studies of phase transitions and strength in vanadium

Michael Stevenson (Edinburgh/Great Britain)



## S 18 – High-pressure life and biosciences

P65

A radiant GRIN at high pressure: Utilizing gradient index lenses to enable multiphoton microscopy at hydrostatic pressure up to 200 MPa

Dominik Schneidereit (Erlangen/Germany)

P66

Comparative study of structural and activity changes of HIV-1 protease and its covalently linked dimer under high pressure

Marek Ingr (Zlín/Czech Republic), Laetitia Palmade, Taťána Majerová, Dominique Chevalier-Lucia, Eva Kutálková, Josef Hrnčířik, Reinhard Lange

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Macromolecular crowding and pressure: crowding agents destabilize proteins in low concentration, but stabilize them in high concentration against pressure unfolding

László Smeller (Budapest/Hungary), Zsófia Török, Frederik Pfalzgraf, Judit Somkuti

## S 20 – High-pressure studies in the Earth & planetary sciences

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Ab initio study of the high pressure phase of the CO<sub>2</sub> clathrate hydrate

J. Manuel Recio (Oviedo/Spain), Fernando Izquierdo-Ruiz, Olga Prieto-Ballesteros

P69

Spectroscopic properties of natural jarosite under high pressure

Alvaro Lobato (Madrid/Spain), Miriam Peña-Alvarez, Ana Isabel Casado, Valentin Garcia Baonza, Mercedes Taravillo

P70

Single crystal x-ray diffraction of forsterite III to 160 GPa

Barbara Lavina (Las Vegas/USA), Sally Lee, Minta C Akin, Paul D Asimow, M. Homel, RS Crum, D Pagan, J Lind, Joel V bernier, JL Mosenfelder, AM Dillman, OV Fat'Yanov, MG Newman

## S 22 – Food science and technology

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Potential of high pressure technology to inactivation of Lactobacillus brevis in beer

Justyna Nasiłowska (Warsaw/Poland), Barbara Sokołowska, Marzena Woszczyk, Dorota Michałowska, Adrianna Raczowska

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Optimization of high hydrostatic pressure extraction by response surface methodology of bioactive compounds from stinging nettle

Jorge Saraiva (Aveiro/Portugal), Silvia Moreira, Elisabete Alexandre, Manuela Pintado

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Brewing characteristics of piezosensitive Sake – yeasts

Kazuki Nomura (Niigata/Japan), Hirofumi Hoshino, Kazuaki Igoshi, Haruka Onozuka, Mayumi Hayashi, Harutake Yamazaki, Hiroaki Takaku, Akinori Iguchi, Toru Shigematsu

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A pilot study of combinations of ultrasonication pre-treatment and high pressure processing effecting microbial inactivation and rheological attributes of liquid egg yolk

Adrienn Tóth (Budapest/Hungary), Csaba Németh, Rebeka Csáti, Réka Juhász, Barbara Csehi, László Friedrich

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High Pressure Processing of baby foods: inactivation of *Saccharomyces cerevisiae* and evaluation of sensory attributes in fruits base product for babies and infants during long shelflife

Bozena Mazurkiewicz (Warsaw/Poland)

#### S 23 – Energy materials under high pressure: experiment and theory

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Combined theoretical and experimental investigations of pressure-driven phase transition in  $\text{InNbO}_4$

Alfonso Munoz (La Laguna/Spain), Placida Rodríguez-Hernandez, Daniel Errandonea, Alka B Garg, Catalin Popescu, Domingo Martinez-Garcia, Juan A Sans, Vanesa Cuenca-Gotor, Pablo Botella

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Structural and vibrational study of monoclinic  $\text{As}_2\text{S}_3$  at high pressure.

Vanesa Paula Cuenca-Gotor (València/Spain), Juan Ángel Sans, Francisco Javier Manjón, Catalin Popescu, Silvana Radescu, Andrés Mujica, Plácida Rodríguez-Hernández, Alfonso Muñoz, Jordi Ibáñez

P78

The effect of pressure on hydrogen solubility in Zircaloy nuclear fuel cladding

John Proctor (Salford/Great Britain), Hannah Weekes, Dean Smith, Cristina Simionescu, Timothy Prior, Mark Wenman, David Dye

P79

High-pressure studies of high-nitrogen-content 6-azido-1,2,3,4-tetrazolo-[1,5-b]-pyridazine

Anna Olejniczak (Poznan/Poland), Anna Katrusiak, Andrzej Katrusiak

P80

Vibrational study of  $\text{In}_2\text{Se}_3$  under high pressure

Rosario Vilaplana (València/Spain), Samuel Gallego, Alfonso Muñoz, Plácida Rodríguez-Hernández, Francisco Javier Manjón, Alfredo Segura, Daniel Errandonea

P81

Effect of pressure on  $\text{Li}_{0.5}\text{Ni}_{0.5}\text{Mn}_2\text{O}_4$ : New quaternary mixed metal oxide – bridging the gap between  $\text{LiMn}_2\text{O}_4$  and  $\text{NiMn}_2\text{O}_4$

Paweł Piszora (Poznań/Poland), Jolanta Darul, Dörthe Haase

#### S 24 – Physics and transformations in compressed matter

P82

A modified system for low temperature experiments in a 3000 ton multi-anvil press

Rick Secco (London/Canada), Wenjun Yong

#### S 26 – Novel magnetic-electronic behavior at extreme P-T

P83

Pressure effect on metamagnetic transition in  $\text{UIrSi}_3$

Jaroslav Valenta (Prague/Czech Republic), Fuminori Honda, Jiří Kaštil, Jiří Prchal, Vladimír Sechovský

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High-pressure effect on magnetism and valence of  $\text{YbPd}_2\text{Si}_2$

Jiří Prchal (Prague/Czech Republic), Jan Fikáček, Jan Prokleška, Jiří Kaštil, Kristina Vlášková, Marie Kratochvílová, Martin Diviš

#### S 27 – Structural phase transitions theory and experiment

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Bonding indicators for the analysis of pressure-induced structural phase transitions

Olga Matthies (Dresden/Germany), Yuri Grin, Miroslav Kohout

#### S 28 – High pressure mineral physics and geochemistry

P86

Densification of calcium-aluminum-silicate glass at the pressure of  $\sim 5.5$  GPa

Ayano Nakajima (Sendai/Japan), Tatsuya Sakamaki, Naoki Hisano, Yoshiki Horioka, Tomonori Ohashi, Akio Suzuki

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Electrical resistivity of Fe, Co and Ni along their melting boundaries

Rick Secco (London/Canada), Reynold Silber, Innocent Ezenwa, Wenjun Yong, Joshua Littleton

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Thermodynamic properties of (Mg,Fe)-silicates at mantle conditions and geophysical implications

Tatiana Sokolova (Irkutsk/Russia), Peter Dorogokupets

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High pressure behaviour of kalsilite-O1

Clivia Hejny (Innsbruck/Austria), Biljana Krüger

P90

X-ray diffraction study of rhodium oxyhydroxide at high pressure

Akio Suzuki (Sendai/Japan), Yoshiki Horioka, Naoki Hisano

P91

Decomposition of fayalite at high hydrogen pressure

Vadim Efimchenko (Moscow/Russia), Nikolay Barkovskii, Vladimir Fedotov, Konstantin Meletov, Aleksandra Bendeliani