

## 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 MgB<sub>2</sub> 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 B<sub>50</sub>N<sub>2</sub>

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 Pótrolniczak (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

P12

Structural evolution of liquid sulphur under pressure

Gunnar Weck (Bruyères-le-Châtel/France), L. Henry, M. Mezouar, G. Garbarino, F. Datchi

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

P13

Raman study of bismuth at high pressure

Julien Haines (Montpellier/France)

P14

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

P15

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

P16

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

P17

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

El Miloudi El Moussafir (Casablanca/Maroko)

P18

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

P19

Post-spinel transition in hausmannite determined by high P-T in situ X-ray diffraction  
Jolanta Darul (Poznan, Poland), Christian Lathe, Pawel Piszora

P20

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

P21

Dimerization in the III-V semiconductor gallium phosphide  
Barbara Lavina (Las Vegas, USA)

P22

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-Tc 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

P34

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-tetramethylidihydrocoumarin

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-triiodimidazole

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

P52

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

P61

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



P62

Structural and electronic properties of  $WX_2$  dichalcogenides at high pressure

Oto Kohulák (Bratislava/Slovakia), Roman Martoňák

P63

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

P64

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 Kutáľková, Josef Hrnčířik, Reinhard Lange

P67

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

P68

Ab initio study of the high pressure phase of the  $CO_2$  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 Raczkowska

P72

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

P73

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

P74

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

P75

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

Bożena Mazurkiewicz (Warsaw/Poland)

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

P76

Combined theoretical and experimental investigations of pressure-driven phase transition in InNbO<sub>4</sub>

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

P77

Structural and vibrational study of monoclinic  $As_2S_3$  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  $In_2Se_3$  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  $Li_{0.5}Ni_{0.5}Mn_2O_4$ : New quaternary mixed metal oxide – bridging the gap between  $LiMn_2O_4$  and  $NiMn_2O_4$

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  $UIrSi_3$

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

P84

High-pressure effect on magnetism and valence of  $YbPd_2Si_2$

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

P85

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 ~5.5 GPa

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

P87

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

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

P88

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

Tatiana Sokolova (Irkutsk/Russia), Peter Dorogokupets

P89

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

## Late abstracts

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Critical-like behaviour in glass forming systems

Aleksandra Drozd-Rzoska (Warsaw/Poland)