**Monday | 31 August**

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|---|---|
| 09:00-12:00 | Registration |
| 12:00-13:30 | Lunch - Restaurant |
| 13:45-14:00 | Opening – Arno Kentgens – Marc Baldus |

| **Session 1** | **In-Vivo/In-Vitro** *(Klaas Nicolaij)* |
|---|---|
| **14:00** | **Kevin Brindle** (*University of Cambridge*)<br>Assessing disease progression and mutational status in cancer using metabolic imaging with hyperpolarized $^{13}$C-labelled cell substrates |
| 14:30 | **Vincent Breukels** *(Radboud University Medical Centre)*<br>Prostate cancer cells display strong pyruvate induced inhibition in the conversion of hyperpolarized (1-$^{13}$C)pyruvate to lactate |
| 14:50 | **Jeremy Gordon** *(UCSF)*<br>Mis-estimation and bias of hyperpolarized ADC measurements due to slice-profile effects |
| 15:10 | **Kasper Lipsø** *(Technical University of Denmark)*<br>Magnetic Resonance angiography in the pig using hyperpolarized water |
| 15:30 | *Break* |
| **16:15** | **Lucio Frydman** *(Weizmann Institute of Science)*<br>Application of heteronuclear cross-relaxation effects for the *in vitro* characterization of enzymatic reactions by hyperpolarized $^{1}$H NMR |
| 16:45 | **Rolf Schulte** *(GE Global Research)*<br>Partial-volume correction for metabolic imaging with hyperpolarized (1-$^{13}$C) pyruvate |
| 17:05 | **El-Tahir Abubakr** *(Technical University of Denmark)*<br>Probing multiple enzymatic pathways via $^{13}$C dual polarization of (1,4-$^{13}C_2$)fumarate and (1-$^{13}$C)pyruvate in a dual clinical PET/MR system and with dual animal scanning |
| 17:25 | **Tangi Roussel** (*Weizmann Institute of Science*)<br>Maternal-fetal exchanges characterized by dynamic hyperpolarized $^{13}$C imaging on pregnant rats |
| 17:45-18:00 | ***Poster pitches*** |
| 18:30 | ***Dinner*** |

**Tuesday | 1 September**

| **Session 2** | **Instrumentation** *(Jan van Bentum)* |
|---|---|
| **08:45** | **Jan Henrik Ardenkjaer-Larsen** *(Technical University of Denmark)*<br>Hyperpolarization by Dissolution-DNP in vivo applications |
| 09:15 | **Daniel Lee** *(INAC Grenoble)*<br>MAS-DNP at 100 K and below: applications to functional materials and developments of sustainable cryogenic helium spinning |
| 09:35 | **Armin Purea** *(Bruker BioSpin)*<br>Millimetre wave irradiation in LT MAS DNP probes |
| 09:55 | **Thorsten Maly** *(Bridge12 Technologies)*<br>Two-isocenter NMR magnet for an integrated THz gyrotron for DNP-NMR spectroscopy |
| 10:15 | *Break* |
| **10:45** | **Igor Koptyug** *(International Tomography Center Novosibirsk)*<br>Catalysis-assisted signal enhancement in nuclear magnetic resonance |
| 11:15 | **Bas van Meerten** *(Radboud University Nijmegen)*<br>Towards Overhauser DNP in supercritical $CO_2$ at high magnetic field: A relaxation study |
| 11:35 | **Vasyl Denysenkov** *(Goethe University Frankfurt)*<br>$^{1}$H DNP probeheads for microimaging at 9.4 T |
| 11:55 | **James Kempf** *(Bruker BioSpin)*<br>Brute-force hyperpolarization for transport & imaging… with a nanoparticle boost |
| 12:15-12:30 | ***Poster pitches*** |
| 12:30 | ***Lunch & Posters*** |

| **Session 3** | **Methodologies** *(Lucio Frydman)* |
|---|---|
| **14:00** | **Songi Han** *(University of California Santa Barbara)*<br>Surface characterization by solid and solution DNP-enhanced NMR |
| 14:30 | **Claudia Avalos** *(Lawrence Berkeley National Laboratory)*<br>Room-temperature nuclear spin hyperpolarization using nitrogen-vacancy centers |
| 14:50 | **Nan Eshuis** *(Radboud University Nijmegen)*<br>Non-hydrogenative PHIP at high magnetic field for trace analysis |
| 15:10 | **Thach Can** *(Massachusetts Institute of Technology)*<br>Electron-nuclear cross polarization: a pulsed DNP study |
| 15:30 | *Break* |
| **16:00** | **Robert G. Griffin** *(Massachusetts Institute of Technology)*<br>High Frequency Dynamic Nuclear Polarization |
| 16:30 | **Björn Corzilius** *(Goethe University Frankfurt)*<br>Dynamic nuclear polarization with endogenous polarizing agents |
| 16:50 | **Basile Vuichoud** *(Ecole Polytechnique Fédérale de Lausanne)*<br>Microwave frequency modulation to enhance dissolution DNP |
| 17:10-17:25 | ***Poster pitches*** |
| 18:00 | ***Dinner*** |
| 19:30 | ***Social Program*** |

**Wednesday | 2 September**

| **Session 4** | **BioNMR** *(Klaartje Houben)* |
|---|---|
| **08:45** | **Hartmut Oschkinat** *(Leibniz-Institut für Molekulare Pharmakologie)*<br>DNP MAS NMR of membrane proteins and at higher temperatures |
| 09:15 | **Mohammed Kaplan** *(Utrecht University)*<br>Cellular DNP-supported solid-state NMR on prokaryotic and eurkaryotic systems in native environment |
| 09:35 | **Jifei Mao** *(Goethe University Frankfurt)*<br>DNP-enhanced solid-state NMR reveals structural basis for peptide ligand selection of human G-protein coupled receptors (GPCR) |
| 09:55 | **Joanna Long** *(University of Florida)*<br>Mechanistic studies of DNP in lipid membranes |
| 10:15 | *Break* |
| **10:45** | **Clemens Glaubitz** *(Goethe University Frankfurt)*<br>DNP enhanced solid-state NMR on membrane proteins: novel applications and experimental considerations |
| 11:15 | **Alexandra Yurkovskaya** *(International Tomography Center Novosibirsk)*<br>Electron transfer between aromatic amino acids and histidine radicals |
| 11:35 | **Jessica Bastiaansen** *(University Hospital Lausanne)*<br>Co-polarization of radical-free mixtures of $^{13}$C metabolites to probe separate biochemical pathways simultaneously in vivo by hyperpolarized $^{13}$C MR |
| 11:55 | **Mor Mishkovsky** *(Ecole Polytechnique Fédérale de Lausanne)*<br>*In vivo* hyperpolarized MR at physiological and pharmaceutical bioprobe concentrations to study cerebral function and metabolism |
| 12:15-12:30 | ***Poster pitches*** |
| 12:30 | ***Lunch & Posters*** |

| **Session 5** | **Relaxation, Kinetics & Dynamics** *(Jörg Matysik)* |
|---|---|
| **14:00** | **COST - Konstantin Ivanov** *(International Tomography Center Novosibirsk)*<br>The role of level anti-crossings in nuclear spin hyperpolarization |
| 14:30 | **Clifford Bowers** *(University of Florida)*<br>Parahydrogen induced polarization by pairwise replacement catalysis |
| 14:50 | **Olivier Ouari** *(Université Aix-Marseille)*<br>Dinitroxide biradicals for efficient cross effect DNP/MAS ssNMR at 9.4 T and 100 K |
| 15:10 | **Ville-Veikko Telkki** *(University of Oulu)*<br>Hyperpolarized ultrafast multidimensional Laplace NMR |
| 15:30 | *Break* |
| **16:00** | **COST - Marco Tessari** *(Radboud University Nijmegen)*<br>Para-hydrogen hyperpolarization for 1D and 2D NMR chemical analysis at sub-micromolar concentrations |
| 16:30 | **Torsten Gaebel** *(University of Sydney)*<br>Hyperpolarized nanodiamond with long spin relaxation times |
| 16:50 | **Norbert Müller** *(Johannes Kepler University)*<br>NMR spin noise spectroscopy of highly polarized samples |
| 17:10 | **Markus Plaumann** *(Otto-von-Guericke University Magdeburg)*<br>Novel developments in the hyperpolarization of $^{19}$F using parahydrogen |
| 17:30-17:45 | ***Poster pitches*** |
| 18:30 | ***Dinner*** |

**Thursday | 3 September**

| **Session 6** | **Materials & Methods** *(Songi Han)* |
|---|---|
| **08:45** | **Olivier Lafon** *(Université de Lille)*<br>The chiaroscuro in DNP-NMR experiments on nanoparticles: which factors make the enhanced nuclear polarization inhomogeneous? |
| 09:15 | **Sami Jannin** *(Ecole Polytechnique Fédérale de Lausanne)*<br>Hybrid polarizing solids for pure hyperpolarized liquids through dissolution dynamic nuclear polarization |
| 09:35 | **Arthur Pinon** *(Ecole Polytechnique Fédérale de Lausanne)*<br>Determining micro structures from relayed DNP NMR |
| 09:55 | **Ulrich Scheler** *(Leibniz-Institut für Polymerforschung Dresden)*<br>Solid-State DNP NMR of spin-labelled polyelectrolytes, layers and complexes |
| 10:15 | *Break* |
| **10:45** | **COST - Frédéric Blanc** *(University of Liverpool)*<br>DNP enhanced solid state NMR of insensitive nuclei: $^{17}$O at natural abundance and low-gamma $^{89}$Y |
| 11:15 | **Moreno Lelli** *(Université de Lyon)*<br>Solid-state DNP at high-temperature, high-field and fast MAS |
| 11:35 | **Ilai Schwartz** *(Universität Ulm)*<br>Room temperature DNP of nanodiamonds by optical means |
| 11:55 | **Christopher Wedge** *(University of Warwick)*<br>Optically generated spin hyperpolarization in solution |
| 12:15-12:30 | ***Poster pitches*** |
| 12:30 | ***Lunch & Posters*** |

| **Session 7** | **Theory & Methods** *(Konstantin Ivanov)* |
|---|---|
| **14:00** | **Malcolm Levitt** *(University of Southampton)*<br>Long-lived states: progress and prospects |
| 14:30 | **Aurélien Bornet** *(Ecole Polytechnique Fédérale de Lausanne)*<br>Drug screening boosted by hyperpolarized long-lived states |
| 14:50 | **Alexander Karabanov** *(University of Nottingham)*<br>Modelling DNP and ELDOR spectra using adiabatic elimination and projection techniques |
| 15:10 | **Daniel Wisniewski** *(University of Nottingham)*<br>Simulating DNP using dynamic Monte Carlo |
| 15:30 | *Break* |
| **16:00** | **COST - Geoffrey Bodenhausen** *(Ecole Polytechnique Fédérale de Lausanne & Ecole Normale Supérieure Paris)*<br>Some remaining challenges for dissolution DNP |
| 16:30 | **Deni Mance** *(Utrecht University)*<br>The field dependence of cross-effect DNP under magic angle spinning: theory vs. experiment |
| 16:50 | **Mallory Guy** *(Dartmouth College)*<br>Comparing frequency modulation schemes for improving DNP enhancement |
| 17:10 | **Frederic Mentink-Vigier** *(INAC Grenoble)*<br>Further insight into the MAS-DNP mechanism: a new simulation method |
| 17:30 | *Break* |
| **18:00-18:30** | **Rob Kaptein** *(Utrecht University)*<br>Hyperpolarization: Hype or Holy Grail? |
| 19:00 | ***Beachside Barbecue supported by Bruker BioSpin*** |

**Friday | 4 September**

| **Session 8** *8:45* | **COST working groups** | | |
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| **WG1**<br>**Hop in the lab**<br>*Ansermet, Nacher, Jannin* | **WG2-3**<br>**Theory and Relaxation**<br>*Ivanov, Rosso, Vieth* | **WG4**<br>**Maximise Information**<br>*Frydman, Wild* | **WG5**<br>**Chemistry & Physics**<br>*Ouari, Bode* |
| **Igor Koptyug** | **Andrea de Luca** | **David Baudouin** | **Paul Tordo** |
| **Thierry Dubroca** | **Sonia Colombo Serra** | **Jean-Nicolas Dumez** | **Anil Jagtap** |
| **Vasyl Denysenkov** | **Manu Kaushik** | **Steven Reynolds** | **Alberto Juan Ruiz de Valle** |
| **Yoon Dongyoug** | **Jonas Milani** | **Phillipp Rovedo** | **Jose Vidal Gancedo** |
| **Gerrit Janssen** | **Andreas Schmidt** | **Aurélien Bornet** | **Chris Witte** |
| **Daniel Lee** | **Andrey Pravdivtsev** | | **Francesca Reineri** |
| **Jan Henrik Ardenkjaer-Larsen** | | | |
| **James Kempf** | | | |
| 11:00 | *Break* | | |
| 11:30 | *Reports Working Groups*<br>*Future Plans*<br>*Closing* | | |
| 12:30 | ***Lunch - Restaurant*** | | |

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| 13:30 | *Management Council Meeting* |