

**XLIX NATIONAL CONGRESS ON MAGNETIC RESONANCE**

ONLINE 8-10 SEPTEMBER 2021

**SCIENTIFIC PROGRAM**

**Tuesday September 7<sup>th</sup> – PRE-MEETING EVENTS**

|             |   |
|-------------|---|
| 10:00-12:00 | <b>GIDRM master and PhD graduate awards</b> |
| 13:10-14:50 | <b>Jeol satellite meeting</b>               |
| 15:00-17:00 | <b>Bruker satellite meeting</b>             |

**Wednesday September 8<sup>th</sup>**

|             |   |
|-------------|---|
| 9:15-9:30   | <b>Opening</b>  |
|             | <b>Chairs: M. Geppi, C. Airoidi</b>   |
| 9:30-10:20  | <b>GIDRM/GIRM gold medal award</b><br><b>S. Mammi</b> MY BEST ... TO BE PREPARED ... TO SERVE                                   |
| 10:20-10:50 | <b>Invited Lecture 1</b><br><b>G. Pintacuda</b> STRUCTURAL DYNAMICS OF MEMBRANE PROTEINS BY MAGIC-ANGLE SPINNING NMR            |
|             | <b>Chairs: M. D'Onofrio, G. Pintacuda</b>   |
|             | <b>Session A. Lectures selected from abstracts</b>  |
| 10:50-11:10 | <b>E. Ravera</b> QUANTUM CHEMICAL METHODS AND PARAMAGNETIC NMR IN (BIO)INORGANIC CHEMISTRY                                      |
| 11:10-11:30 | <b>L. Russo</b> THE DARK SIDE OF THE HUMAN PRION PROTEIN  |
| 11:30-11:50 | <b>F. Favretto</b> THE ROLE OF PROLINE CIS/TRANS ISOMERIZATION AND CHAPERON ACTIVITY IN THE PROCESS OF $\alpha$ SYN AGGREGATION |
| 11:50-12:10 | <b>M. Spano</b> HEMP PRODUCTS: NMR CHARACTERIZATION OF INFLORESCENCES AND HEMP SEED OILS  |
| 12:10-12:30 | <b>BRACCO LECTURE - A. Fringuello Mingo</b> PRE-CLINICAL IMPLEMENTATION AND VALIDATION OF A MR FINGERPRINTING SEQUENCE          |
| 12:30-14:00 | <b>Lunch break</b>  |
|             | <b>Chairs: G. Pileio, V. Michaelis</b>  |
| 14:00-14:30 | <b>Invited Lecture 2</b>  |

|             |   |
|-------------|---|
|             | <b>K. Schmidt-Rohr</b> QUANTIFICATION OF DOMAIN SIZES FROM 2 TO 200 NM BY SPIN DIFFUSION ANALYSIS   |
|             | <b>Session B. Lectures selected from abstracts</b>  |
| 14:30-14:50 | <b>F. Nardelli</b> EXPLORING THE DYNAMICS OF ELASTOMERS BY <sup>1</sup> H FIELD CYCLING NMR RELAXOMETRY   |
| 14:50-15:10 | <b>M. E. Di Pietro</b> GOING DEEPER WITH NMR: INTERACTIONS AND DYNAMICS OF DEEP EUTECTICS   |
| 15:10-15:30 | <b>R. Rizzato</b> NMR SPECTROSCOPY WITH NV DEFECTS IN DIAMOND: FROM SURFACE-NMR TO HYPERPOLARIZATION  |
| 15:30-15:50 | <b>T. B. R. Robertson</b> SIGNAL AMPLIFICATION BY REVERSIBLE EXCHANGE (SABRE) HYPERPOLARISATION OF MIRFENTANIL IN THE PRESENCE OF HEROIN  |
| 15:50-16:10 | <b>BRUKER LECTURE - J. Kempf</b> DNP DEVELOPMENTS IN SOLIDS & DISSOLUTION DNP AT BRUKER   |
|             | <b>Chairs: S. Borsacchi, K. Schmidt-Rohr</b>  |
| 16:10-17:10 | <b>Poster Session I: Materials, Small Molecules, Methods (short presentations and discussion)</b><br><b>Bravetti, Scarperi, Vitone, Di Pietro, Cesari, Landi, Francischello, Vanoli</b> |
| 17:10-17:40 | <b>Invited Lecture 3</b><br><b>A. De Angelis</b> SOLUTION AND SOLID-STATE NMR STUDIES OF SARS-COV-2   |

### Thursday September 9<sup>th</sup>

|             |  |
|-------------|--|
|             | <b>Chairs: M. Geppi, F. Separovic</b>  |
| 9:30-10:00  | <b>Invited Lecture 4</b><br><b>L. Frydman</b> IN VIVO <sup>2</sup> H AND <sup>13</sup> C METABOLIC IMAGING AS COMPLEMENT TO <sup>1</sup> H MRI IN THE CHARACTERIZATION OF HEALTH AND DISEASE |
| 10:00-10:40 | <b>Under 35 GIDRM award</b><br><b>C. Ciaramelli</b> NMR-DRIVEN IDENTIFICATION OF MOLECULES WITH BENEFICIAL EFFECTS ON HUMAN HEALTH IN COMPLEX MATRICES                                       |
|             | <b>Chairs: G. Pileio, A. Corazza</b>   |
|             | <b>Session C. Lectures selected from abstracts</b>   |
| 10:40-11:00 | <b>A. Barbanente</b> NMR APPROACH FOR INVESTIGATING TWO NEW OXALILPLATIN-PYROPHOSPHATO ANALOGS   |
| 11:00-11:20 | <b>F. Martini</b> STRUCTURE AND DYNAMICS OF "COOL" ORGANIC PIGMENTS BY SOLID STATE NMR   |
| 11:20-11:40 | <b>T. A. A. Cartlidge</b> TOWARDS A SIMULATION FRAMEWORK FOR MAGNETIC SUSCEPTIBILITY INDUCED RELAXATION OF SPINS DIFFUSING IN POROUS MEDIA   |
| 11:40-12:00 | <b>JEOL LECTURE - M. Perez</b> JASON: A NOVEL NMR TOOL   |
| 12:00-12:30 | <b>Invited Lecture 5</b><br><b>M. Chierotti</b> SOLID-STATE NMR IN CRYSTAL ENGINEERING: A SIMPLE TITLE FOR A COMPLEX TOPIC   |
| 12:30-14:00 | <b>Lunch break</b>   |
|             | <b>Chairs: G. Parigi, M. Chierotti</b>   |
| 14:00-14:30 | <b>Invited Lecture 6</b>   |

**A. Corazza** NMR TITRATIONS SHED LIGHT ON THE MECHANISM OF NEGATIVE COOPERATIVITY AND ON THE STRUCTURAL LONG-DISTANCE CONFORMATIONAL EFFECTS OF TRANSTHYRETIN LIGAND BINDING

**Chairs: G. Parigi, S. Mammi**

**Session D. Lectures selected from abstracts**

14:30-14:50 **R. A. Salvino** A METABOLIC STUDY OF CALABRIAN BERGAMOT ESSENTIAL OIL USING NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY

14:50-15:10 **G. Petrella** THE SYNERGIC USE OF UHPLC-HRMS AND NMR IN METABOLOMICS

15:10-15:30 **G. Conta** NMR-BASED METABOLOMICS AND MULTI-BLOCK OMIC APPROACH TO INVESTIGATE THE ROLE OF GUT MICROBIOME IN CHILDREN WITH TYPE 1 DIABETES

15:30-15:50 **V. Ghini** NMR AS A TOOL FOR THE BIOCHEMICAL CHARACTERIZATION OF MICROORGANISMS OF BIOTECHNOLOGICAL INTEREST

15:50-16:20 **Invited Lecture 7**  
**V. Michaelis** UNDERSTANDING TIN-CONTAINING PEROVSKITE MATERIALS WITH HELP FROM SOLID-STATE NMR SPECTROSCOPY

16:20

**GIDRM Assembly**

**Friday September 10<sup>th</sup>**

**Chairs: G. Parigi, M. D'Onofrio**

9:30-10:00

**Invited Lecture 8**

**F. Separovic** STRUCTURE DETERMINATION OF ANTIMICROBIAL PEPTIDES IN MODEL MEMBRANES AND LIVE BACTERIA

10:00-11:10

**Poster Session II: Biology, Metabolomics, Food  
(short presentations and discussion)**

**Schiavina, Vanni, Acconcia, Bonaccorsi, Giampaoli, Ahmed, Grifagni, Colella, Di Matteo**

**Chairs: M. Alecci, L. Frydman**

11:10-12:00

**Poster Session III: MRI and Contrast Agents (short presentations and discussion)**  
**Ricci, Fiscone, Bitonto, Di Ciò, Borgese, Zumbo, Conti**

12:00-12:30

**Invited Lecture 9**

**P. Marzola** APPLICATIONS OF MAGNETIC NANOPARTICLES IN BIOMEDICINE: PAST, PRESENT AND FUTURE TRENDS

12:30-14:00

**Lunch break**

**Chairs: M. Alecci, P. Marzola**

**Session E. Lectures selected from abstracts**

14:00-14:20 **M. Marrale** RADIOMIC ANALYSIS ON MR IMAGES OF THALAMUS OF PATIENTS WITH ESSENTIAL TREMORS

14:20-14:40 **M. Costagli** NAVIGATOR-BASED RETROSPECTIVE MOTION CORRECTION AND RESIDUAL LEARNING FOR 3D-MRF: APPLICATION TO ADULT AND PEDIATRIC PATIENTS

14:40-15:00 **M. Lucignani** GPU FITTING OF MULTI-COMPARTMENT MODELS ON BRAIN DIFFUSION MRI: A TEST-RETEST RELIABILITY STUDY

15:00-15:20 **S. Minosse** NODDI MODEL IN HIV INFECTION

|             |  |
|-------------|--|
| 15:20-15:50 | <b>Invited Lecture 10</b><br><b>M. Rosen</b> LIFE AT THE BOTTOM: CONTEMPORARY MILLITESLA NMR AND MRI   |
|             | <b>Chairs: S. Geninatti, M. Rosen</b>  |
|             | <b>Session F. Lectures selected from abstracts</b>   |
| 15:50-16:10 | <b>G. Ferrauto</b> HYDROPHOBIC INTERACTIONS BETWEEN MACROCYCLIC GD-COMPLEXES AND POLYAROMATIC SYSTEMS AS ROUTE TO ENHANCE THE LONGITUDINAL WATER RELAXIVITY IN MAGNETIC RESONANCE IMAGING. |
| 16:10-16:30 | <b>A. Galante</b> SPHERICAL DIELECTRIC RESONATORS FOR UHF MRI  |
| 16:30-16:50 | <b>D. Lalli</b> A SURPRISING COMPLEXITY OF THE GD(III)AAZTA CHELATE REVEALED BY NMR IN THE FREQUENCY AND TIME DOMAINS  |
| 16:50-17:20 | <b>Invited Lecture 11</b><br><b>G. T. Montelione</b> ASSESSMENT OF PREDICTION METHODS FOR PROTEIN STRUCTURES DETERMINED BY NMR IN CASP: IMPACT OF ALPHAFOLD2                               |
|             | <b>Chair: M. Geppi, A. De Angelis</b>  |
| 17.20       | <b>Poster Competition Awards and Closing</b>   |