

# Scientific Program

International Webinar on

## Magnetism and Magnetic Materials

Monday  
July 26, 2021

Day 1 - July 26, 2021 - British Time

11.00 - 11.10 Introduction

### Keynote Presentations

11:10 - 11:45 Resonant Light Scattering by Subwavelength Particles: New effects  
**Michael I. Tribelsky**, Lomonosov Moscow State University, Russia

### Oral Presentations

11:45 - 12:10 Seamless frequency-connection quantum network of solid spins through diamond optomechanical cavity  
**Ying Gu**, Peking University, China

12:10 - 12:35 Design and synthesis of new superconductors and topological quantum catalysts  
**Huixia Luo**, Sun Yat-Sen University, China

12:35 - 13:00 Simultaneous measurement of polarization and orbital angular momentum of optical signals  
**Ziyao Lyu**, Shanghai Jiao Tong University, China

Lunch (13:00 - 13:30)

### Keynote Presentations

13:30 - 14:05 A Four Red and Green Channel Using Multi slot-waveguide Technology  
**Dror Malka**, Holon Institute of Technology (HIT), Israel

### Oral Presentations

14:05 - 14:30 Magnon superfluidity at room temperature  
**Yury Bunkov**, M-Granat, Russian Quantum Center, Russia

14:30 - 14:55 Electrochemical growth of  $\text{CoFe}_2\text{O}_4$  nanowires with high internal magnetic field  
**Nabil Labchir**, University of Lyon, France

14:55 - 15:20 Superinsulators a new Topological Phase of Matter  
**Maria Cristina Diamantini**, University of Perugia, Italy

15:20 - 15:45 Deep Unity of Quantum and Newtonian Gravitation Field Theories at the Space Thermostat Presence with Finite Temperature  
**Ivanov Mikhail Jakovlevich**, Central Institute of Aviation Motors, Russia

15:45 - 16:10 When laser methods encounter porphyrin derivatives to create multifunctional thin layers destined for corrosion inhibition and sensor devices  
**FAGADAR-COSMA Eugenia**, Institute of Chemistry "Coriolan Dragulescu", Romania

16:10 - 16:35 The Gauss-Newton Quantum-Relativity (GNQR)  
**Benedykt Michal Josef Campbell Biezanek**, United Kingdom

16:35 - 17:00 Effect of Reaction Volume and Metal Concentration on the Morphology and Magnetic Properties of Iron-Nickel Alloy  
**Norhan Nady**, SRTA-City, Egypt

17:00 - 17:25 Kaushal and Gravity  
**Kaushal Prashant**, University of Glasgow, United Kingdom

17:25 - 17:50 Silicone Gel-encased Bonding Wire Deformation Measurement Using a LF-OCT system  
**Zhiyi Zhao**, University of Liverpool, United Kingdom

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17:50 - 18:15 Magnetic flux observations using a Ferrolens  
**Timm Vanderelli**, Primary Investigator, Ferrocell USA

18:15 - 18:40 Two-Dimensional Silicon Carbide: Bridging Theory and Experiment  
**Sakineh Chabi**, University of New Mexico, USA

18:40 - 19:05 **William Brown**, Colorado State University - Pueblo, USA

End of Day 1 Sessions

**Tuesday**  
July 27, 2021

Day 2 - July 27, 2021 - British Time

### Keynote Presentation

11:00 - 11:35 Conformal Coatings for Laser Applications  
**Adriana Szeghalmi**, Friedrich Schiller University Jena, Germany

### Oral Presentations

11:35 - 12:00 Uniform Beam Diffraction: A blue print for poling quality of Quasi-Phase-Matching devices  
**Prashant Povel Dwivedi**, Manipal University Jaipur, India

12:00 - 12:25 Overcoming the asymmetry of the electron and hole doping for magnetic transitions in bilayer CrI<sub>3</sub>  
**Sukanya Ghosh**, Abdus Salam International Centre for Theoretical Physics, Italy

12:25 - 12:50 Astronomical Evidence of Magnetic Monopoles and Its Implication-Mechanism of Supernova explosion and Challenge to Black Hole Models  
**Qiu-He Peng**, Nanjing University, China

12:50 - 13:15 Paramagnetic effects in biological systems under exposure to low intensity electromagnetic fields  
**Emanuele Calabrò**, University of Messina, Italy

### Lunch (13:15 - 13:55)

13:55 - 14:20 High-entropy alloys and their potential toward magnetic applications  
**Magdalena Wencka**, Jozef Stefan Institute, Slovenia and Institute of Molecular Physics, Poland

14:20 - 14:45 Thermo-responsive core/shell SPION and their drug release properties  
**Halima Alem**, Universite de Lorraine, France

14:45 - 15:10 Magnetoresistive Superferromagnetic Sensors  
**V.N. Kondratyev**, IBLTP, JINR, Russia

15:10 - 15:35 Quantum Dynamics of Ultracold Atoms under Tunable Trap  
**Utpal Roy**, Indian Institute of Technology, India

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**July 27, 2021**

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15:35 - 16:00 Gauge Invariance in Counting and Combinatorics and its Applications to Quantum Mechanics and General Relativity  
**Koustubh Ajit Kabe**, Mumbai University, India

### Keynote Presentation

16:00 - 17:00 Creating materials with a desired refraction coefficient  
**Alexander G. Ramm**, Kansas State University, USA

### Oral Presentations

17:00 - 17:25 A Turiyam set to deal human cognition and its quantum state  
**Prem Kumar Singh**, Gandhi Institute of Technology and Management, India

17:25 - 17:50 Quantum-classical mechanics: Principles, applications, and prospects  
**Vladimir Valentinovich Egorov**, Russian Academy of Sciences, Russia

### Poster Presentations

17:50 - 18:05 Exchange mechanisms in a class of molecular magnets  
**M. Georgiev**, Bulgarian Academy of Sciences, Bulgaria

### Video Presentations

18:05 - 18:20 Adaptive Laser Soldering Technology Based on Commercial CW 450 nm Diode Lasers  
**Hristo Iliev**, Sofia University St."Kliment Ohridski", Bulgaria

### End of Day 2 Sessions