

Program for EMN Meeting on QCQI-2016

14:00-18:00

Monday Afternoon, 22nd August, Onsite Registration & Sign up

**Tuesday Morning, 23rd August
Room A**

07:50-08:00

Opening Ceremony

**Session: Quantum Free-space and Quantum Communications and Cryptography I
Chair: Andreas Reiserer**

08:00-08:25

A01: Long Distance Quantum Cryptography using Low Loss Optical Fiber

Daniel Nolan
Corning Incorporated, United States

08:25-08:50

A02: Experimental quantum digital signatures: A personal perspective of the first four years

Robert John Collins
Heriot-Watt University, UK

08:50-09:15

A03: Algebraic constructions and analysis of codes for quantum cryptography

Mitsuru Hamada
Tamagawa University, Japan

09:15-09:40

A04: Coherent population oscillation based light storage in an atom cell

Fabienne Goldfarb
The University of Paris, France

09:40-10:05

A05: Decoy states protocol for a subcarrier wave quantum key distribution system

Anton Kozubov
ITMO University, Russia

10:05-10:20

Session Break

**Session: Quantum Free-space and Quantum Communications and Cryptography II
Chair: Cristian Bahrim**

10:20-10:45

A06: The quantum bandwidth resource – harnessing broadband time-energy entangled photons for quantum information and communication

Avi Peer
Bar Ilan University, Israel

10:45-11:10

A07: Quantum Entanglement and Implications for Quantum Phase Transitions

Subramaniam Shankaranarayanan
Indian Institute of Science Education and Research, India

11:10-11:35

A08: Atmospheric quantum channels: weak and strong turbulence regimes

Dmytro Vasylyev
Universität Rostock, Germany

11:35-12:00

A09: Lifting the Bandwidth Limit of Optical Homodyne Measurement

Yaakov Shaked
Bar Ilan University, Israel

12:00

Lunch Break

**Tuesday Afternoon, 23rd August
Room A**

Session: Quantum Dots/low Dimensional Structures in Quantum Information Science I Chair: Mladen Pavicic		
13:00-13:25	A10: Flying Q-bits and Entangled Photons Enabling Quantum Communication	Dieter Bimberg Institut fuer Festkoerperphysik, Germany
13:25-13:50	A11: Dynamic acoustic control of single photon emission from III-Nitride nanowire heterostructures	Snezana Lazic Universidad Autónoma, Spain
13:50-14:15	A12: Two-dimensional materials for quantum light sources and authentication	Robert Young Lancaster University, UK
14:15-14:40	A13: Quantum computing with Si acceptor spins	Dimi Culcer University of New South Wales, Australia
14:40-15:05	A14: Atomic-Precision Device Engineering for Electron Spin Lifetime Measurements of Phosphorus Donor Qubits in Silicon	Bent Weber Monash University, Australia
15:05-15:30	A15: The Practical Security of Continuous Variable Quantum Key Distribution	Yichen Zhang Beijing University of Posts and Telecommunications, China
15:30-15:40	Session Break	
Session: Quantum Networking & Switching Photonics I Chair: Dieter Bimberg		
15:40-16:05	A16: Low Loss and Highly Non-Linear Integrated Photonics for Quantum Photonics Applications	Png Ching Eng Jason A*Star Institute of High Performance Computing, Singapore
16:05-16:30	A17: Optical nonlinearity enhancement in rubidium vapor	Nikolai Korneev National Institute of Astrophysics, Optics and Electronics, Mexico
16:30-16:55	A18: Quantum optical nonlinearities with Rydberg atoms	Etienne Brion Laboratoire Aimé Cotton, France
16:55-17:20	A19: Quantum-state mapping in atom-cavity systems	Grzegorz Chimczak Adam Mickiewicz University, Poland
17:20-17:45	A20: Locking a Probe Laser Beam on a Dielectric Surface through Radiation Coupling: A New Photonic Switching Mechanism	Cristian Bahrim Lamar University, USA
17:45-18:10	A21: Highly sensitive THz-wave detection by novel hetero-barrier diode for imaging applications	Hiroshi Ito Kitasato University, Japan
18:10	Dinner Social	

Wednesday Morning, 24th August Room A		
Session: Session: Quantum Networking & Switching Photonics II Chair: Stuart Gray		
08:00-08:25	A22: Quantum entanglement property in quantum networks based on multipartite entangled state	Xiaolong Su Shanxi University, China
08:25-08:50	A23: Cavity-based quantum networks	Andreas Reiserer Max-Planck-Institute for Quantum Optics, Germany
08:50-09:15	A24: Controlled transmission proposal for trapped ions inside a coupled cavities system	Fabiano Kenji Nohama Federal University of Tocantins, Brazil
09:15-09:40	A25: Equilibration in quantum networks	Novotny Jaroslav Czech Technical University, Czech Republic
09:40-10:05	A26: The role of game isomorphism in quantum games	Piotr Frąckiewicz Pomeranian University, Poland
10:05-10:20	Session Break	
Session: Quantum Remote Sensing; Quantum Ghost Imaging; Quantum Sources I Chair: Avi Peer		
10:20-10:45	A27: Advantages and disadvantages of ghost imaging	Huizu Lin National University of Defense Technology, China
10:45-11:10	A28: Photon-sparse imaging: Trans-wavelength ghost imaging	Reuben S. Aspden University of Glasgow, UK
11:10-11:35	A29: Telecom band quantum light sources and their applications on long distance ghost imaging over optical fibers	Wei Zhang Tsinghua University, China
11:35-12:00	A30: Sensitive, real-time THz detection and imaging using Rydberg atoms	Kevin Weatherill Durham University, UK
12:00	Lunch Break	

Wednesday Afternoon, 24th August Room A		
Session: Quantum Remote Sensing; Quantum Ghost Imaging; Quantum Sources II Chair: Häyrynen Teppo		
13:00-13:25	A31: Quantum Interference Effects in Open Quantum Systems	Mihai A. Macovei Academy of Sciences of Moldova, Moldova
13:25-13:50	A32: Graphene Josephson junctions providing new functionality for superconducting sensors	Jonathan Prance Lancaster University, UK
13:50-14:15	A33: Exploring nanoscale photon detection in superconducting nanowires with detector tomography	Michiel J.A. de Dood Leiden University, Netherlands

14:15-14:40	A34: Understanding specific multivalent lectin-carbohydrate recognition using quantum dots-FRET based technology	Yuan Guo University of Leeds, UK
14:40-15:05	A35: Hybrid quantum devices based on Josephson junctions	Kaveh Delfanazari University of Cambridge, UK
15:05-15:30	A36: Two state graphene/Aluminum Josephson Junctions	Arturo Tagliacozzo University of Naples Federico II, Italy
15:30-16:00	Session Break & Poster	
Poster	P01: In situ nanoscale spin imaging of intracellular proteins under ambient conditions	Shijie Peng University of Science and Technology of China
Poster	P02: Tracking Moving Object of High Speed with Ghost Imaging	Shuai Sun National University of Defense Technology, China
Session: General I Chair: Grzegorz Chimczak		
16:00-16:25	A37: Hybrid quantum systems for the realization of a macroscopic quantum entanglement	Mandip Singh Indian Institute of Science Education and Research, India
16:25-16:50	A38: Optical Levitation in Vacuum of Nano-diamonds Containing Nitrogen-Vacancy Centres	Gavin W Morley University of Warwick, UK
16:50-17:15	A39: Parametric phase sensitive amplifiers for microwave photonics applications	Fabien Bretenaker École Polytechnique, France
17:15-17:40	A40: Dynamical properties of intensity dependent two-mode Raman coupled model in Kerr medium	Sudha Singh Ranchi University, India
17:40-18:05	A41: Scattering resonances for ultracold atoms in periodically modulated traps	Vicente Leyton Universidad Santiago de Cali, Colombia
18:05-18:30	A42: Quantum Learning	Elizabeth Behrman Wichita State University, USA
18:30	Dinner Social	

Wednesday Morning, 24th August Room B		
Session: General II Chair: Cameron Jennings		
08:00-08:25	B01: Elegant vector Laguerre-Gaussian beams as normal modes at planar photonic structures	Wojciech Nasalski Polish Academy of Sciences, Poland

08:25-08:50	B02: Massive Generation of Contextual Quantum Sets	Mladen Pavicic Humboldt University of Berlin, Germany
08:50-09:15	B03: Path-Entangled photons from Symmetric Strongly-Coupled Atom-Micro-cavity Systems	Marc-André Dupertuis Swiss Federal Institute of Technology, Switzerland
09:15-09:40	B04: Dynamics of Synchronization in a Network of Non-linear Quantum Oscillator	Susmita Kar Indian Institute of Technology, India
09:40-10:05	B05: Quantum control of spins in solids and its applications	Kong Xi University of Science and Technology of China
10:05-10:20	Session Break	
Session: Superconducting Qubit Using Circuit Quantum Electrodynamics Chair: Reuben S. Aspden		
10:20-10:45	B06: Retrieve Fast Signal via a Slow Detector	Yao-Kun Xu National University of Defense Technology, China
10:45-11:10	B07: Super harmonic Resonances in a Strongly Coupled Cavity-Atom System	Eyal Buks Technion-Israel Institute of Technology, Israel
11:10-11:35	B08: Coupling Bismuth-spins Clock Transitions in Silicon to Superconducting Circuits	Eva Dupont-Ferrier University College London, UK
11:35-12:00	B09: Coherent state control in an superconducting three-level system using stimulated adiabatic Raman passage	Gheorghe Sorin Paraoanu Aalto University School of Science, Finland
12:00	Lunch Break	

Thursday Morning, 25th August Room A		
Session: Quantum Dots/low Dimensional Structures in Quantum Information Science II Chair: Wojciech Nasalski		
08:00-08:25	A43: Theoretical and experimental investigation of quantum coherence and quantum uncertainty relations in pure diamond	Heng Fan Chinese Academy of Sciences, China
08:25-08:50	A44: Optically-measured electron spin lifetimes and spin relaxation in GaAs and SiC	John S. Colton Brigham Young University, USA
08:50-09:15	A45: Type-I and type-II quantum dots for quantum communication and computation	Petr Klenovsky Masaryk University, Czech Republic

09:15-09:40	A46: Modelling and design of cavities exhibiting high Q and strong mode confinement	Häyrynen Teppo Technical University of Denmark
09:40-10:05	A47: Engineering squeezed phonon reservoir of a quantum dot	Zbigniew Ficek King Abdul-Aziz City for Science and Technology, Saudi Arabia
10:05-10:20	Session Break	
Session: General III Chair: Gheorghe Sorin Paraoanu		
10:20-10:45	A48: Intracellular quantum measurements	Romana Schirhagl University Medical Center Groningen, Netherlands
10:45-11:10	A49: Quantum fluctuation theorems and power measurements	Gentaro Watanabe Zhejiang University, China
11:10-11:35	A50: Coherent light scattering from a quantum degenerate Bose-gas	Leonid Gerasimov Peter the Great St. Polytechnic University, Russia
11:35-12:00	A51: Dissipative Quantum Repeats	Christine Muschik University of Innsbruck, Austria
12:00	Lunch Break	

Thursday Afternoon, 25th August Room A		
Session: Quantum Dots/low Dimensional Structures in Quantum Information Science III Chair: Png Ching Eng Jason		
13:00-13:25	A52: Hybrid integration of III-V quantum dot light source in silicon	Mohamed Benyoucef University of Kassel, Germany
13:25-13:50	A53: Laser field effect on quantum rings	Henrikh Baghrmian University of Tarapaca, Chile
13:50-14:15	A54: Fabrication of III-nitride dot-in-a-wire single photon sources	Zarko Gacevic The Technical University of Madrid, Spain
14:15-14:40	A55: Two-Photon Transitions in Coupled Quantum Dots	Cameron Jennings University of California Merced, USA

14:40-15:05	A56: Ultrafast high-fidelity initialization of a quantum-dot spin qubit without magnetic fields	Jonathan D. Mar Hitachi Europe Ltd, UK
15:05-15:30	A57: Significant-loophole-free Bell test with entangled photons	Marijn Versteegh IQOQI, Austrian Academy of Sciences, Vienna, Austria
15:30-15:40	Session Break	
Session: Quantum Dots/low Dimensional Structures in Quantum Information Science IV Chair: John S. Colton		
15:40-16:05	A58: Spin control and transport in GaAs(111) quantum wells	Alberto Hernández-Mínguez Paul-Drude-Institut für Festkörperelektronik, Germany
16:05-16:30	A59: Quantum simulations and quantum imaging of dopants in silicon	Joe Salfi University of New South Wales, Australia
16:30-16:55	A60: Resonance fluorescence and laser spectroscopy of three-dimensionally confined excitons in monolayer WSe ₂	Santosh Kumar Heriot Watt University, UK
16:55-17:20	A61: Improving the performance of functionalized carbon nanotube gas sensors loaded in a perturbed microwave resonant cavity	Sahib Babae Tooski Azad University, Iran
17:20-17:45	A62: Quantum Steering and Secure Quantum Teleportation	Qiongyi He Peking University, China
17:45-18:10	A63: Optimization of STIRAP-based State Transfer Under Dissipation	Ying-Dan Wang Chinese Academy of Sciences, China
18:10-18:35	A64: High-dimensional Hyper entanglement from a biphoton frequency comb	Xie Zhenda University of California & Nanjing University, China
18:10	Dinner Social	

August 26, 2016

One day Academic exchange & Excursion