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Journées Portes Ouvertes Etudiants en Master/Master Students Open Day

Institut Néel, October 27th (Friday), 2017, room Nevill Mott D420

Morning session : Condensed Matter and Materials

9:00-9:20: Welcome address and general presentation of Néel Institute by Director Etienne Bustarret
9:20-10:30 (30 flash presentations/2min per presentation)

Title *(speaker, team acronym, department)*

(1a) Cavitation and Confinement *(P.E. Wolf, P. Spathis, HELFA, MCBT)*
(1b) Instrumentation for extreme turbulence *(P.E. Wolf, P.E. Roche, HELFA, MCBT)*
(1c) Dissipation in a tangle of quantized vortices *(P.E. Wolf, P.E. Roche, HELFA, MCBT)*
(2) New generation of phosphors for LED lighting prepared by sol-gel method *(I. Gautier-Luneau, Optima, PLUM)*
(3) New generation of eco-efficient phosphors for white LED lighting *(A. Ibanez, Optima, PLUM)*
(4) Bio-activation of mesoporous silica nanoparticles by selective DNA destructuration *(X. Cattoen, Optima, PLUM)*
(5) Epitaxial Rhenium thin films for quantum nanocircuits *(C. Naud, CQ, QUEST)*
(6) Superconducting qubits *(O. Buisson, CQ, QUEST)*
(7) Novel quantum interference experiments with ultra-short single electron charge pulses *(C. Bauerle, CQ, QUEST)*
(8) Circuit-QED: amplification at the single-photon level *(N. Roch, CQ, QUEST)*
(9a) Single photon sources based on quantum dot semiconductor nanowires *(M. Hocevar, NPSC, PLUM)*
(9b) Hybrid nanowires for topological quantum computing *(M. Hocevar, NPSC, PLUM)*
(10a) Search for new high critical temperature superconductors *(P. Toulemonde, MRS, PLUM)*
(10b) Study of the physical properties of new unconventional bidimensional superconductors under extreme conditions of pressure *(P. Toulemonde, MRS, PLUM)*
(11) Superconducting Higgs mode *(M.-A. Measson, SupraMag, MCBT)*
(12a) Superconducting Josephson junctions based on van der Waals heterostructures *(L. Marty, Hybrid, QUEST)*
(12b) Suspended graphene and nanotubes for low temperature opto-electronics *(L. Marty, Hybrid, QUEST)*
(12c) Graphene based superconducting quantum bit *(L. Marty, Hybrid, QUEST)*
(12d) Spin polarisation in graphene functionalized with 2D molecular assemblies *(L. Marty, Hybrid, QUEST)*
(13) Quantum electronic transport probed by thermoelectricity *(C. Winkelmann, QNES, QUEST)*
(14a) Artificial frustrated (classical) spin systems as a playground to investigate collective magnetic phenomena and exotic states of matter *(N. Rougemaille, MNM, QUEST)*
(14b) Graphene based spintronic devices *(N. Rougemaille, MNM, QUEST)*
(15) Quantum plasmonic in a chiral world *(A. Drezet, NOF, PLUM)*
(16) Investigation of magnetization processes in R-M intermetallic compounds *(O. Isnard, MRS, PLUM)*
(17) Thermal expansion in rare-earth cage systems *(M. Amara, MS, MCBT)*
(18) Echelles d'états quantiques dans des jonctions Josephson *(R. Melin, TQC, QUEST)*
(19a) Long range electron-electron interactions and charge frustration *(S. Fratini, ThMC, MCBT)*
(19b) Charge transport in organic semiconductors: atomistic investigation of dynamic disorder (S. Fratini or G. D'Avino, ThMC, MCBT)
(20) Nano-optomechanics and hybrid spin qubit nanomechanical systems (O. Arcizet, NOF, PLUM)
(21) La pression comme contrôle du couplage entre propriétés magnétiques et électriques (M.-B. Lepetit, ThMC, MCBT

10:30-10:45: Coffee break and registrations to discussions (up to 3) with the speakers
10:45-12:15: Discussions with the speakers

During coffee break you may **register to up to 3 discussions** (to take place before 12:15) with the speakers. When relevant, the discussions could be an opportunity to visit experimental rooms.
Meetings can obviously be organised with researchers after October 27th: you are encouraged to take appointments.

12:15: Buffet-style lunch together with researchers (sponsored by the Labex LANEF)

Afternoon session: Nanosciences

14:15-14:45: Welcome address and general presentation of Néel Institute by Deputy Director Serge Huant

14:45-16:00 (29 flash presentations/2min per presentation)

Title *(speaker, team acronym, department)*

(1) Epitaxial rhenium thin films for quantum nanocircuits *(Cécile Naud, Cohérence Quantique, QUEST)*
(2) Superconducting qubits *(O. Buisson, CQ, QUEST)*
(3a) Single photon sources based on quantum dot semiconductor nanowires *(M. Hocevar, NPSC, PLUM)*
(3b) Hybrid nanowires for topological quantum computing *(M. Hocevar, NPSC, PLUM)*
(4) Chemical mapping at the sub-nm scale of ultraviolet µ-LEDs *(C. Bougerol, NPSC, PLUM)*
(5) Quantum superpositions of causal relations *(C. Branciard, NPSC, PLUM)*
(6) Coherent control of the spin of an individual magnetic atom with surface acoustic waves *(L. Besombes, NPSC, PLUM)*
(7) Coupling a single quantum dot to a mechanical oscillator *(J.-P. Poizat, NPSC, PLUM)*
(8) Novel quantum interference experiments with ultra-short single electron charge pulses *(C. Bauerle, CQ, QUEST)*
(9) Circuit-QED: amplification at the single-photon level *(N. Roch, CQ, QUEST)*
(10a) Artificial frustrated (classical) spin systems as a playground to investigate collective magnetic phenomena and exotic states of matter *(N. Rougemaille, MNM, QUEST)*
(10b) Graphene based spintronic devices *(N. Rougemaille, MNM, QUEST)*
(11) Quantum plasmonic in a chiral world *(A. Drezet, NOF, PLUM)*
(12) Investigation of magnetization processes in R-M intermetallic compounds *(O. Isnard, MRS, PLUM)*
(13a) Superconducting Josephson junctions based on van der Waals heterostructures *(J. Renard, Hybrid, QUEST)*
(13b) Suspended graphene and nanotubes for low temperature opto-electronics *(J. Renard, Hybrid, QUEST)*
(13c) Graphene based superconducting quantum bit *(J. Renard, Hybrid, QUEST)*
(13d) Spin polarisation in graphene functionalized with 2D molecular assemblies *(J. Renard, Hybrid, QUEST)*
(14) Spectroscopic investigation of optically trapped nanoparticles in Air *(J. Fick, NOF, PLUM)*
(15) Quantum electronic transport probed by thermoelectricity *(C. Winkelmann, QNES, QUEST)*
(16) Charge detection by electrostatic force microscopy in quantum devices *(H. Sellier, QNES, QUEST)*
(17a) Nonlinear optics with hybrid plasmonic nanostructures *(G. Bachelier, NOF, PLUM)*
(17b) Photon pair generation in hybrid nonlinear/plasmonic nanostructures *(G. Bachelier, NOF, PLUM)*
(18a) Cavitation and confinement *(P.E. Wolf, P. Spathis, HELFA, MCBT)*
(18b) Instrumentation for extreme turbulence *(P.E. Wolf, P.E. Roche, HELFA, MCBT)*
(18c) Dissipation in a tangle of quantized vortices *(P.E. Wolf, P.E. Roche, HELFA, MCBT)*
(19) Theory and experiments on magnetic skyrmions (J. Vogel, MNM, QUEST)
(20) Nano-optomechanics and hybrid spin qubit nanomechanical systems (O. Arcizet, NOF, PLUM)
(21) La pression comme contrôle du couplage entre propriétés magnétiques et électriques (M.-B. Lepetit, ThMC, MCBT

16:00-16h30: coffee break and registrations to discussions (up to 3) with the speakers
16:30-18:00: Discussions with the speakers
During coffee break you may **register to up to 3 discussions** (to take place before 18:00) with the speakers. When relevant, the discussions could be an opportunity to visit experimental rooms.
Meetings can obviously be organised with researchers after October 27th: you are encouraged to take appointments.