
# MONDAY, July 23rd

Plenary Lecture, 23/07/2018, 09:15 - Auditorium

**MPL01**
**Probing and controlling excitons in 2D semiconductors**
Heinz, Tony F.
*Dept. of Applied Physics, Stanford University and SLAC National Accelerator Laboratory, Menlo Park, Stanford and Menlo Park, United States.*

Invited Lecture, 23/07/2018, 10:00 - Auditorium

**MI01**
**Franckeite: a naturally occurring superlattice**
Castellanos-Gomez, Andres.
*Materials Science Factory, Instituto de Ciencia de Materiales de Madrid (ICMM – CSIC), Madrid, Spain.*

Oral Contributions I, 23/07/2018, 10:30 - Auditorium

**M01**
**Microscopic Origin of the Valley Hall Effect in Transition Metal Dichalcogenides**
Nicolas, Ubrig; Sanghyun, Jo; Marc, Philippi; Davide, Costanzo; Alexey B., Kuzmenko; Alberto F., Morpurgo.
*DQMP, Université de Genève, Switzerland.*

**M02**
**2D Carbon for Cascaded Spintronic Logic**
Friedman, Joseph [1]; Girdhar, Anuj [2]; Heinrich-Barna, Stephen [3]; Chalifoux, Wesley [4]; Leburton, Jean-Pierre [2]; Sahakian, Alan [5].
*[1] The University of Texas at Dallas, Richardson, TX, United States; [2] The University of Illinois at Urbana-Champaign, Urbana, IL, United States; [3] Texas Instruments, Inc., Dallas, TX, United States; [4] The University of Nevada at Reno, Reno, NV, United States; [5] Northwestern University, Evanston, IL, United States.*

***11:00-11:30 Coffee Break***


Invited Lecture, 23/07/2018, 11:30 - Auditorium

**MI02**
**Topological and Interaction Effects in Atomically Thin 1D & 2D Materials**
Louie, Steven G.
*Physics Department, University of California at Berkeley, and Lawrence Berkeley National Lab, Berkeley, United States.*

**MI03**
**Quantum Transport in Nanostructured Graphene**
Jauho, Antti-Pekka.
*Technical University of Denmark, CNG, DTU Nanotech, Denmark.*

Oral Contributions II, 23/07/2018, 12:30 - Auditorium

**M03**
**Tunnel spectroscopy of localised quantum states in the barrier of graphene-hBN-graphene transistors**
Greenaway, Mark [1]; Vdovin, Evgenii [2]; Ghazaryan, Davit [3]; Misra, Abhishek [3]; Mishchenko, Artem [3]; Cao, Yang [3]; Wang, Zihao [3]; Wallbank, John [3]; Holwill, Matt [3]; Morozov, Sergey [2]; Makarovsky, Oleg [4]; Fromhold, Mark [4]; Patanè, Amalia [4]; Geim, Andre [3]; Fal'ko, Vladimir [3]; Novoselov, Konstantin [3]; Eaves, Laurence [4].
*[1] Loughborough University, Loughborough, United Kingdom; [2] IMT and HPM, RAS, Chernogolovka, Russian Federation; [3] University of Manchester, Manchester, United Kingdom; [4] University of Nottingham, Nottingham, United Kingdom.*

**M04**
**Anisotropic band structure engineering in graphene via 1D patterned dielectric superlattices**
Dietrich, Scott [1]; Forsythe, Carlos [1]; Watanabe, Kenji [2]; Tanaguchi, Takashi [2]; Hone, James [1]; Dean, Cory R. [1].
*[1] Columbia University, New York, United States; [2] National Institute for Materials Science, Tsukuba, Japan.*

Invited Lecture, 23/07/2018, 13:00 - Auditorium

**MI04**
**Charged topological solitons in zigzag graphene nanoribbons**
Brey, Luis; López-Sancho, M. Pilar.
*Instituto de Ciencia de Materiales de Madrid-CSIC, Madrid, Spain.*

***13:30-14:45 Lunch***


Invited Lecture, 23/07/2018, 14:45 - Auditorium

**MI05**
**Investigation of The Single and Two Hole Lateral Quantum Dot System**
Sachrajda, Andy.
*National Research Council of Canada, Ottawa, Canada.*

Oral Contributions III, 23/07/2018, 15:15 - Auditorium

**M05**
**Coherent coupling between spin qubits of different codes**
Noiri, Akito [1]; Nakajima, Takashi [1]; Yoneda, Jun [1]; Delbecq, Matthieu [2]; Stano, Peter [1]; Otsuka, Tomohiro [3]; Takeda, Kenta [1]; Amaha, Shinichi [1]; Allison, Giles [1]; Kawasaki, Kento [4]; Ludwig, Arne [5]; Wieck, Andreas [5]; Loss, Daniel [6]; Tarucha, Seigo [4].
*[1] RIKEN, Wako, Japan; [2] ENS-PSL, Paris, France; [3] Tohoku University, Sendai, Japan; [4] University of Tokyo, Tokyo, Japan; [5] Ruhr-Universität Bochum, Bochum, Germany; [6] University of Basel, Basel, Switzerland.*

**M06**
**Reverse engineering and optimization for controlling the two-interacting spins**
Chen, Xi.
*Shanghai University, Shanghai, China.*

**M07**
**Dispersive readout of adiabatic phases**
Kholer, Sigmund.
*Instituto de Ciencia de Materiales de Madrid, CSIC, Madrid, Spain.*

**M08**
**Optimal feedback control of a single-electron transistor**
Timo, Wagner; Johannes C., Bayer; Eddy P., Rugeramigabo; Rolf. J., Haug.
*Leibniz Universität, Hannover, Germany.*

***16:15-16:30 Coffee Break***

Invited Lecture, 23/07/2018, 16:30 - Auditorium

**MI06**

**Tem Quantum Computation and Simulation -- Spins Inside**
Vandersypen, Lieven M.k.
*QuTech and Kavli Institute of Nanoscience, Delft, Netherlands.*

Oral Contributions IV, 23/07/2018, 17:00 - Auditorium

**M09**
**Quantum state imaging of atomically precise devices in silicon**
Voisin, Benoit [1]; Salfi, Joe [1]; Usman, Muhammad [2]; Bocquel, Juanita [1]; Tankasala, Archana [3]; Johnson, Brett C. [2]; Mccallum, Jeff C. [2]; Rahman, Rajib [3]; Simmons, Michelle Y. [1]; Hollenberg, Lloyd C.l. [2]; Rogge, Sven [1].
*[1] CQC2T-UNSW, Sydney, Australia; [2] CQC2T-Uni Melbourne, Melbourne, Australia; [3] Purdue University, West Lafayette, IN, United States.*

**M10**
**Type-II Quantum Dots with Topology Driven g-factor Tunability**
Llorens, José Manuel [1]; Lopes-Oliveira, Vivaldo [2]; López-Richard, Victor [3]; Cardozo De Oliveira, Edson [3]; Wevior, Lucaz [4]; Ulloa, José María [5]; Teodoro, Marcio D. [3]; Marques, Gilmar E. [3]; García-Cristóbal, Alberto [6]; Quiang-Hai, Guo [7]; Alén, Benito [4].
*[1] Institute of Micro and Nanotechnology CSIC, Tres, Spain; [2] Universidade Estadual de Mato Grosso do Sul, Mato Grosso, Brazil; [3] Universidade Federal de Sao Carlos, Sao Paulo, Brazil; [4] Institute of Micro and Nanotechnology CSIC, Tres Cantos, Spain; [5] Institute for Systems based on Optoelectronics and Microtechnology - UPM, Madrid, Spain; [6] Instituto de Ciencia de Materiales (ICMUV), Valencia, Spain; [7] Instituto de Física de Sao Carlos, Sao Paulo, Brazil.*

**M11**
**Coherent control of a spin qubit in a frequency-locked loop**
Nakajima, Takashi [1]; Kawasaki, Kento [2]; Noiri, Akito [1]; Yoneda, Jun [1]; Stano, Peter [1]; Otsuka, Tomohiro [1]; Takeda, Kenta [1]; Delbecq, Matthieu [3]; Amaha, Shinichi [1]; Allison, Giles [1]; Ludwig, Arne [4]; Wieck, Andreas [4]; Loss, Daniel [5]; Tarucha, Seigo [1].
*[1] RIKEN, Saitama, Japan; [2] University of Tokyo, Tokyo, Japan; [3] Ecole Normale Supérieure-PSL Research University, Paris, France; [4] Ruhr-Universität Bochum, Bochum, Germany; [5] University of Basel, Basel, Switzerland.*

**M12**
**High resolution Imaging and Nanoanalytics with He and Ne ions**
Gnauck, Peter.
*Carl Zeiss Microscopy, Oberkochen, Germany.*

***18:00-19:30 Poster Sessions***


***19:30h Welcome Reception at Historical CSIC Student Residence***


# TUESDAY, July 24th

Plenary Lecture, 24/07/2018, 09:00 - Auditorium

**TPL01**
**Magic-Angle Graphene: A New Platform for Strongly Correlated Physics**
Pablo Jarillo-Herrero
*MIT, USA*

Invited Lecture, 24/07/2018, 09:45 - Auditorium

**TI01**
**There is plenty of room at the bottom, but even more in a fractal**
Cristiane Morais-Smith
*Utrecht University, NL*

Oral Contributions V, 24/07/2018, 10:15 - Auditorium

**T01**
**Chiral response of twisted bilayer graphene**
Stauber, Tobias [1]; Low, Tony [2]; Gómez-Santos, Guillermo [3].
*[1] Material Science Institute, Madrid, Spain; [2] University of Minnesota, Minneapolis, United States; [3] Universidad Autónoma de Madird, Madrid, Spain.*

**T02**
**Confining superconductivity in graphene bilayer**
Kraft, Rainer [1]; Mohrmann, Jens [1]; Du, Renjun [1]; Selvasundaram, Pranauv [1]; Irfan, Muhammad [2]; Kanilmaz, Nefta [1]; Wu, Fan [1]; Beckmann, Detlef [1]; Von Löhneysen, Hilbert [1]; Krupke, Ralph [1]; Akhmerov, Anton [2]; Gornyi, Igor [1]; Danneau, Romain [3].
*[1] Institute of Nanotechnology/Karlsruhe Institute of Technology, Karlsruhe, Germany; [2] Kavli Institute of Nanoscience, TU Delft, Netherlands; [3] Institute of Nanotechnology / Karlsruhe Institute of Technology, Karlsruhe, Germany.*

**T03**
**Gate-tunable Room-temperature Ferromagnetism in Two-dimensional $Fe_3GeTe_2$**
Deng, Yujun [1]; Yu, Yijun [1]; Song, Yichen [1]; Zhang, Jingzhao [2]; Wang, Nai Zhou [3]; Wu, Yi Zheng [1]; Zhu, Junyi [2]; Wang, Jing [1]; Chen, Xian Hui [3]; Zhang, Yuanbo [1].
*[1] Fudan University, Shanghai, China; [2] the Chinese University of Hong Kong, Hong Kong, China; [3] University of Science and Technology of China, Hefei, China.*

***11:00-11:30 Coffee Break***


Invited Lecture, 24/07/2018, 11:30 - Auditorium

**TI02**

**Non-Reciprocal Transmission and Reflection of a Chirally-Coupled Quantum Dot**

Price, David. M.; Hurst, David L.; Bentham, Chris; Makhonin, Maxim M.; Royall, Ben; Clarke, Ed; Kok, Pieter; Wilson, Luke R.; Skolnick, Maurice S.; Fox, Mark.
*University of Sheffield, Sheffield, United Kingdom.*

**TI03**

**Using fractional quantum Hall states to enhance polariton-polariton interactions**

Ravets, Sylvain [1]; Patrick, Knüppel [2]; Stefan Suiza, Faelt [2]; Martin, Kroner [2]; Werner, Wegscheider [2]; Atac, Imamoglu [2].
*[1] C2N, Marcoussis, France; [2] ETH Zürich, Zürich, Switzerland.*

Oral Contributions VI, 24/07/2018, 12:30 - Auditorium

**T04**

**An orbital angular momentum microlaser with optically controlled chirality**

Carlon Zambon, Nicola [1]; St-Jean, Philippe [1]; Milicevic, Marijana [1]; Sagnes, Isabelle [1]; Harouri, Abdelmounaim [1]; Le Gratiet, Luc [1]; Lemaître, Aristide [1]; Ravets, Sylvain [1]; Amo, Alberto [2]; Bloch, Jacqueline [1].
*[1] Centre de Nanosciences et de Nanotechnologies (C2N), CNRS, Univ. Paris-Sud, Université Paris-Saclay, Marcoussis, France; [2] Université de Lille, CNRS, UMR 8523 – PhLAM – Physique des Lasers Atomes et Molécules, Lille, France.*

**T05**

**Temperature effect on non-equilibrium polariton condensates**

Rozas, Elena [1]; Martin, M. Dolores [1]; Tejedor, Carlos [1]; Vina, Luis [1]; Deligeorgis, George [2]; Hatzopoulos, Zacharias [2]; Savvidis, Pavlos G. [2].
*[1] Universidad Autonoma de Madrid, Madrid, Spain; [2] FORTH-IESL, Heraklion, Greece.*

**T06**

**Excitonic states in hBN/TMDC monolayer/hBN van der Waals heterostructures**

Cedric, Robert; Emmanuel, Courtade; Marco, Manca; Bo, Han; Shivangi, Shree; Gang, Wang; Fabian, Cadiz; Thierry, Amand; Bernhard, Urbaszek; Xavier, Marie.
*CNRS-LPCNO, TOULOUSE, France.*

**T07**

**Quantum-correlated photons from semiconductor cavity polaritons**

Munoz Matutano, Guillermo [1]; Wood, Andrew [1]; Johnsson, Mattias [1]; Vidal Asensio, Xavier [1]; Baragiola, Ben [1]; Reinhard, Andreas [1]; Lemaitre, Aristide [2]; Bloch, Jaqueline [2]; Amo, Alberto [2]; Nogues, Gilles [3]; Besga, Benjamin [3]; Richard, Maxime [3]; Volz, Thomas [1].
*[1] Macquarie University, Sydney, Australia; [2] CNRS, Paris, France; [3] CNRS, Grenoble, France.*

***13:30-14:45 Lunch***

Invited Lecture, 24/07/2018, 14:45 - Auditorium

**TI04**
**Novel and scalable III-V nanostructures for photonics and quantum transport**
Fontcuberta I Morral, Anna.
*Laboratory of Semiconductor Materials, Institute of Materials, Lausanne, Switzerland.*

Oral Contributions VII, 24/07/2018, 15:15 - Auditorium

**T08**
**Magnetotransport of two-dimensional hole gas in undoped GaSb quantum well**
Shibata, Kenji [1]; Karalic, Matija [2]; Mittag, Christopher [2]; Lei, Zijin [2]; Tschirky, Thomas [2]; Reichl, Christian [2]; Wegscheider, Werner [2]; Ihn, Thomas [2]; Ensslin, Klaus [2].
*[1] Tohoku Institute of Technology, Sendai, Japan; [2] Solid State Physics Laboratory, ETH Zurich, Zurich, Switzerland.*

**T09**
**Spatial control of the carrier capture in a $MoSe_2$ monolayer**
Rosati, Roberto; Lengers, Frank; Reiter, Doris E; Kuhn, Tilmann.
*Institut für Festkörpertheorie and Center for Multiscale Theory and Computation, Universität Münster, Münster, Germany.*

**T10**
**Whispering gallery modes in a multiwall MoS2 nanotube optical resonator**
Kazanov, Dmitrii [1]; Poshakinskiy, Alexander [1]; Davydov, Valery [1]; Remškar, Maja [2]; Shubina, Tatiana [1].
*[1] Ioffe Institute of RAS, Saint Petersburg, Russian Federation; [2] Jožef Stefan Institute, Ljubljana, Slovenia.*

**T11**
**Lattice-Matched Epitaxial Graphene Grown on Boron Nitride**
Diez Albar, Juan.
*University of Nottingham, Nottingham, United Kingdom.*

***16:15-16:30 Coffee Break***


Plenary Lecture, 24/07/2018, 16:30 - Auditorium

**TPL02**
**Ge and Si Nanowires: New Platforms for Spin and Majorana Qubits**
Loss, Daniel.
*Department of Physics, University of Basel, Basel, Switzerland.*

Oral Contributions VIII, 24/07/2018, 17:15 - Auditorium

**T12**
**A 2x2 quantum dot analogue simulator**
Dehollain, Juan Pablo [1]; Mukhopadhyay, Uditendu [1]; Reichl, Christian [2]; Wegscheider, Werner [2]; Vandersypen, Lieven [1].
*[1] QuTech, TU Delft, Delft, Netherlands; [2] ETH Zürich, Zürich, Switzerland.*

**T13**
**Direct measurement on the Kondo cloud length in a quantum dot coupled to a 1D Fabry-Perot interferometer**
Borzenets, Ivan [1]; Yamamoto, Michihisa [2]; Chen, Jason [3]; Arne, Ludwig [4]; Wieck, Andreas [4]; Tarucha, Seigo [2].
*[1] City University of Hong Kong, Kowloon, Hong Kong; [2] Riken, Tokyo, Japan; [3] The University of Tokyo, Tokyo, Japan; [4] Rurh-University Bochum, Bochum, Germany.*

***18:00-19:30 Poster Sessions***


# WEDNESDAY, July 25th

Plenary Lecture, 25/07/2018, 09:00 - Auditorium

**WPL01**
**Majorana Qubits**
Leo Kouwenhoven
*Microsoft Station Q at Delft University of Technology, The Netherlands*

Invited Lecture, 25/07/2018, 09:45 - Auditorium

**WI01**
**Metallization of Rashba wire by superconducting layer in the strong-proximity regime**
Klinovaja, Jelena.
*Department of Physics, University of Basel, Basel, Switzerland.*

**WI02**
**Yu-Shiba-Rusinov states in single atoms and molecules on superconductors**
Franke, Katharina J.
*Fachbereich Physik, Freie Universität Berlin, Berlín, Germany.*

Oral Contributions IX, 25/07/2018, 10:45 - Auditorium

**W01**
**Detection of Majorana non-locality in hybrid dot-nanowire systems**
Prada, Elsa [1]; Deng, Mingtang [2]; Vaitiekenas, Saulius [2]; San-Jose, Pablo [3]; Nygard, Jesper [2]; Krogstrup, Peter [2]; Aguado, Ramon [3]; Marcus, Charles [2].
*[1] Condensed Matter Physics Center (IFIMAC) and Instituto Nicolás Cabrera, Universidad Autonoma de Madrid, Madrid, Spain; [2] Center for Quantum Devices and Station Q Copenhagen, Niels Bohr Institute, Copenhagen, Denmark; [3] Materials Science Factory, Instituto de Ciencia de Materiales de Madrid, Consejo Superior de Investigaciones Científicas (ICMM-CSIC), Madrid, Spain.*

***11:00-11:30 Coffee Break***

Invited Lecture, 25/07/2018, 11:30 - Auditorium

**WI03**
**Single electron pumps for the revised SI system of units**
Schumacher, Hans Werner.
*Physikalisch-Technische Bundesanstalt, Braunschweig, Germany.*


Oral Contributions X, 25/07/2018, 12:00 - Auditorium

**W02**
**Optomechanical circulator with a planar microcavity**
Poshakinskiy, Alexander; Poddubny, Alexander.
*Ioffe Institute, St. Petersburg, Russian Federation.*

**W03**
**Giant Two-Mode Non-linearity Using a Single Quantum Dot Embedded in a Photonic Wire**
Nguyen, Hoai Anh [1]; Grange, Thomas [1]; Reznychenko, Boris [1]; Yeo, Inah [1]; De Assis, Pierre-Louis [1]; Tumanov, Dmitrii [1]; Fratini, Filippo [1]; Malik, Nitin [2]; Dupuy, Emmanuel [2]; Gregersen, Niels [3]; Auffèves, Alexia [1]; Gérard, Jean-Michel [2]; Claudon, Julien [2]; Poizat, Jean-Philippe [1].
*[1] Université Grenoble Alpes, Institut Néel, CNRS, Grenoble, France; [2] Université Grenoble Alpes, CEA, INAC-PHELIQS, Grenoble, France; [3] Dept of Photonic Engineering, DTU Fotonik, Kongens Lyngby, Denmark.*

**W04**
**Exotic Quantum Dynamics and Interactions in Nanophotonics Structures**
González-Tudela, Alejandro.
*Max Planck Institute for Quantum Optics, Garching, Germany.*

**W05**
**Monolithic Quantum Light Source with Hybrid Pumping**
Fuster, David; González, Yolanda; González, Luisa; Alén, Benito.
*IMN-CNM, CSIC, Tres Cantos, Madrid, Spain.*

**W06**
**Topological phenomena in photonic-crystal superlattices**
Bravo-Abad, Jorge.
*Universidad Autónoma de Madrid, Madrid, Spain.*

**W07**
**Light Emission from direct bandgap Silicon-Germanium**
Dijkstra, Alain [1]; Ren, Yizhen [1]; Fadaly, Elham [1]; Verheijen, Marcel [1]; Gagliano, Luca [1]; Koelling, Sebastian [1]; Finley, Jonathan [2]; Botti, Silvana [3]; Haverkort, Jos [1]; Bakkers, Erik [1].
*[1] Eindhoven University of Technology, Eindhoven, Netherlands; [2] Walter Schottky Institut, Technische Universität München, Munich, Germany; [3] Friedrich-Schiller University of Jena, Jena, Germany.*

***13:30-14:30 Lunch***

**14:30 Segovia Tour**


# THURSDAY, July 26th

Plenary Lecture, 26/07/2018, 09:00 - Auditorium

**THPL01**
**Coherent Coupling of a Single Spin to a Single Photon**
Petta, Jason.
*Princeton University, Department of Physics, Princeton, United States.*

Invited Lecture, 26/07/2018, 09:45 - Auditorium

**THI01**
**Quantum dots made from semiconductor nanowires and nanolayers for quantum information processing**
Xu, Hongqi.
*Beijing Key Laboratory of Quantum Devices and Key Laboratory for the Physics and Chemistry of Nanodevices, Peking University, Beijing, China.*

Oral Contributions XI, 26/07/2018, 10:15 - Auditorium

**TH01**
**Deterministic assembly of a spin-photon interface based on a semiconductor quantum dot**
Millet, Clément; Hilaire, Paul; Loredo, Juan; Anton, Carlos; Somaschi, Niccolo; Harouri, Abdelmounaim; Lemaitre, Aristide; Sagnes, Isabelle; Krebs, Olivier; Kimura, Daniel; Senellart, Pascale; Lanco, Loic.
*Centre de Nanosciences et de Nanotechnologies, Marcoussis, France.*

**TH02**
**Input-output theory for spin-photon coupling in Si double quantum dots**
Benito, Mónica [1]; Mi, Xiao [2]; Taylor, Jacob M. [3]; Petta, Jason R. [2]; Burkard, Guido [1].
*[1] University of Konstanz, Konstanz, Germany; [2] Princeton University, Princeton, United States; [3] NIST, College Park, United States.*

**TH03**
**Fast long-range state transfer in quantum dot arrays via shortcuts to adiabaticity**
Ban, Yue [1]; Chen, Xi [2]; Platero, Gloria [1].
*[1] Instituto de ciencia de materiales de madrid, ICMM-CSIC, MADRID, Spain; [2] Department of Physics, Shanghai University, Shanghai, China, SHANGHAI, China.*

***11:00-11:30 Coffee Break***


Invited Lecture, 26/07/2018, 11:30 - Auditorium

**THI02**
**Topological Physics in HgTe-based Quantum Devices**
Molenkamp, Laurens.
*Würzburg University, Würzburg, Germany.*

Oral Contributions XII, 26/07/2018, 12:00 - Auditorium

**TH04**
**Evaluation of Josephson Vortex Core Size Induced in Corbino-geometry Josephson Junctions**
Matsuo, Sadashige [1]; Tateno, Mizuki [1]; Sato, Yosuke [1]; Ueda, Kento [1]; Takeshige, Yusuke [1]; Kamata, Hiroshi [1]; Lee, Joon Sue [2]; Shojaei, Borzoyeh [2]; Palmstrøm, Christopher J. [2]; Tarucha, Seigo [1].
*[1] The university of Tokyo, Bunkyo-ku, Japan; [2] University of California, CA, United States.*

**TH05**
**Topological protection of surface states from exceptional points in Weyl and nodal line semimetals**
Rafael, Molina; José, González; Enrique, Benito-Matías.
*Instituto de Estructura de la Materia - CSIC, Madrid, Spain.*

**TH06**
**Generation and manipulation of Majorana states in hybrid 2D Josephson junctions with ferromagnetic-insulators**
Virtanen, Pauli [1]; Bergeret, Sebastian [2]; Strambini, Elia [1]; Giazotto, Francesco [1]; Braggio, Alessandro [1].
*[1] NEST, Istituto Nanoscienze-CNR and Scuola Normale Superiore, Pisa (Italy), Italy; [2] Centro de Fisica de Materiales (CFM-MPC), Centro Mixto CSIC-UPV/EHU, Donostia International Physics Center (DIPC), San Sebastian (Spain), Spain.*

**TH07**
**Field control of surface states in topological materials**
Diaz Fernandez, Alvaro; Del Valle Navarro, Natalia; Dominguez-Adame Acosta, Francisco.
*Universidad Complutense de Madrid, Madrid, Spain.*

Invited Lecture, 26/07/2018, 13:00 - Auditorium

**THI03**
**Topology- and geometry-driven effects in advanced micro- and nanoarchitectures**
Fomin, Vladimir.
*IFW Dresden, Dresden, Germany.*

***13:30-14:45 Lunch***

Invited Lecture, 26/07/2018, 14:45 - Auditorium

**THI04**
**From epitaxy to science and processing technologies of novel van der Waals crystals**
Patanè, Amalia.
*School of Physics and Astronomy The University of Nottingham, Nottingham, United Kingdom.*

Oral Contributions XIII, 26/07/2018, 15:15 - Auditorium

**TH08**
**A Platform for Edgeless and Purely Gate-Defined Nanostructures in InAs Quantum Wells**
Christopher, Mittag; Matija, Karalic; Zijin, Lei; Thomas, Tschirky; Werner, Wegscheider; Thomas, Ihn; Klaus, Ensslin.
*ETH Zürich, Zürich, Switzerland.*

**TH09**
**Electronic and spintronic properties of colloidal PbS nanosheets**
Ramin Moayed, Mohammad Mehdi [1]; Bielewicz, Thomas [1]; Zöllner, Martin Sebastian [2]; Noei, Heshmat [3]; Stierle, Andreas [3]; Herrmann, Carmen [2]; Klinke, Christian [1].
*[1] Institute of Physical Chemistry, University of Hamburg, Hamburg, Germany; [2] Institute of Inorganic Chemistry, University of Hamburg, Hamburg, Germany; [3] DESY NanoLab, Deutsches Elektronensynchrotron DESY, Hamburg, Germany.*

**TH10**
**Patterned dielectric superlattices on van der Waals 2D materials**
Forsythe, Carlos [1]; Zhao, Xiaodong [2]; Taniguchi, Takashi [3]; Watanabe, Kenji [3]; Pasupathy, Abhay [1]; Moon, Pilkyung [4]; Koshino, Mikito [5]; Kim, Philip [6]; Dean, Cory [1].
*[1] Columbia University, New York, United States; [2] Fudan University, Shanghai, China; [3] National Institute for Materials Science, Tsukuba, Japan; [4] NYU-ECNU, Shanghai, China; [5] Osaka University, Toyonaka, Japan; [6] Harvard University, Cambridge, United States.*

**TH11**
***Layertronics* – the layer localization control of topological states in bilayer graphene with a gate voltage**
Ayuela, Andres [1]; Jaskolski, Wlodzimierz [2]; Pelc, Marta [3]; Bryant, Garnett [4]; Chico, Leonor [5].
[1] *Centro de Fisica de Materiales, CFM-MPC CSIC-UPV/EHU, San Sebastian, Spain;* [2] *Nicolaus Copernicus University, Institute of Physics, Torun, Poland;* [3] *Donostia International Physics Center, San Sebastian, Spain;* [4] *National Institute of Standards and Technology, Gaithersburg, United States;* [5] *Instituto de Ciencias de Materiales de Madrid, Madrid, Spain.*

***16:15-16:30 Coffee Break***

Invited Lecture, 26/07/2018, 16:30 - Auditorium

**THI05**
**2D semiconductors for Nanoscale Biology**
Leburton, Jean-Pierre; Aditya, Sarathy; Nagendra, Athreya.
*University of Illinois, Urbana, Il 61801, United States.*

Oral Contributions XIV, 26/07/2018, 17:00 - Auditorium

**TH12**
**All-thermal transistor based on stochastic switching**
Sánchez, Rafael [1]; Thierschmann, Holger [2]; Molenkamp, Laurens W. [3].
[1] *Universidad Autónoma de Madrid, Madrid, Spain;* [2] *TU Delft, Delft, Netherlands;* [3] *Universität Würzburg, Würzburg, Germany.*

**TH13**
**Anomalous Joule law in the adiabatic dynamics of a normal-superconductor quantum dot**
Lopez, Rosa.
*IFISC, Palma de Mallorca, Spain.*

**TH15**
**Magnetic quantum ratchet effect in CdTe-based lateral superlattices**
Stefan, Hubmann [1]; Philipp, Faltermeier [1]; Grigory, Budkin [2]; Vasily, Bel'kov [2]; Leonid, Golub [2]; Eugenius, Ivchenko [2]; Zbigniew, Adamus [3]; Grzegorz, Karczewski [3]; Tomasz, Wojtowicz [3]; Dmitry, Kozlov [4]; Dieter, Weiss [1]; Sergey, Ganichev [1].
[1] *University of Regensburg, Regensburg, Germany;* [2] *Ioffe Institute, St. Petersburg, Russian Federation;* [3] *Institue of Physics, Polish Academy of Sciences, Warsaw, Poland;* [4] *A. V. Rzhanov Institute of Semiconductor Physics, Novosibirsk, Russian Federation.*


***18:00-19:30 Poster Sessions***

**20:30 Conference Dinner at Pedro Larumbe Restaurant**


# FRIDAY, July 27th

Plenary Lecture, 27/07/2018, 09:00 - Auditorium

**FPL01**
**Quantum Computing in Silicon**
Simmons, Michelle Y.
*University of New South Wales; Centre of Excellence for Quantum Computation and Communication Technology, Kensington; Sydney, Australia.*

Invited Lecture, 27/07/2018, 09:45 - Auditorium

**FI01**
**Versatile Spin Control with Triple Quantum Dots: Hybrid Spin Qubit, QND, and Coherent Entanglement Transfer**
Seigo Tarucha
*Department of Applied Physics School of Engineering, The Univ. Tokyo*

**FI02**
**Semiconductor quantum dot based quantum electronics**
Kim, Dohun.
*Department of Physics and Astronomy, Seoul National University, Seoul, Korea (Democratic People's Republic).*

Oral Contributions XV, 27/07/2018, 10:45h - Auditorium

**F01**
**Entanglement control and magic angles for acceptor qubits in Si**
Abadillo-Uriel, Jose Carlos [1]; Salfi, Joe [2]; Hu, Xuedong [3]; Rogge, Sven [2]; Calderon, Maria Jose [1]; Culcer, Dimitrie [4].
*[1] Instituto de Ciencia de Materiales de Madrid, Madrid, Spain; [2] School of Physics and Centre for Quantum Computation and Communication Technology, Sydney, Australia; [3] University of Buffalo, Buffalo, United States; [4] School of Physics and Australian Research Council Centre of Excellence in Low-Energy Electronics Technologies, Sydney, Australia.*

***11:00-11:30 Coffee Break***


Plenary Lecture, 27/07/2018, 11:30 - Auditorium

**FPL02**
**Interlayer Excitons and Magneto-Exciton Condensation in van der Waals Heterostructures**
Kim, Philip.
*Harvard University, Cambrigde, United States.*

Oral Contributions XVI, 27/07/2018, 12:15 - Auditorium

**F03**
**Enhanced direct exciton emission in single multiwall nanotubes of transition metal dichalcogenides**
Shubina, Tatiana [1]; Davydov, Valery [1]; Belyaev, Kirill [1]; Smirnov, Alexandr [1]; Toropov, Alexey [1]; Poshakinskiy, Alexandr [1]; Rybkovskiy, Dmitry [2]; Remškar, Maja [3]; Mintairov, Alexandr [1]; Fathipour, Sara [4]; Seabaugh, Alan [4]; Gil, Bernard [5].
*[1] Ioffe Institute of RAS, Saint Petersburg, Russian Federation; [2] Skolkovo Institute of Science and Technology, Moscow, Russian Federation; [3] Jožef Stefan Institute, Ljubljana, Slovenia; [4] University of Notre Dame, Notre Dame, United States; [5] CNRS-Université de Montpellier, Montpellier, France.*

**F04**
**Controllable symmetry transition for the circular photogalvanic effect in monolayer $MoSe_2$.**
Quereda, Jorge.
*Zernike Institute for Advanced Materials, Groningen, Netherlands.*

Invited Lecture, 27/07/2018, 12:45 - Auditorium

**FI03**
**Quantum Dots in 2D Materials: Progress, Challenges, and Opportunities**
Moody, Galan.
*National Institute of Standards & Technology, Boulder, United States.*

**13:15 Closing**