# 2018 IEEE INTERNATIONAL CONFERENCE ON MICROWAVE MAGNETICS

# POSTER PROGRAM

# POSTER SESSIONS

## MONDAY 25th JUNE

### POSTER SESSION I

**17:30 – 19:00**

**The Forum**

## TUESDAY 26th JUNE

### POSTER SESSION II

**17:30 – 19:00**

**The Forum**

# A. RF, MICROWAVE AND MILLIMETER WAVE DEVICES

## A01: Additive Manufacturing with in-situ Poling and Measurement of complex Permeability of Hexaferrite-Polymer Composite around FMR Frequency

Max Ho[1] ,Siyuan Liu[1], Rustu Umut Tok[1], Srinivas Prasad[1], Ethan Wang[1], and Rob N. Candler[1,2,3] *1. Department of Electrical and Computer Engineering, University of California, Los Angeles 2. Department of Mechanical and Aerospace Engineering, University of California, Los Angeles 3. California NanoSystems Institute, University of California, Los Angeles*

## A02: Approaches to Measure Magnetic Nano-objects with Stripline Resonators

Rodger M. Walser[1,3], Alaka P. Valanju[1,3] and Prashant M. Valanju[2,3] *1. College of Engineering, University of Texas at Austin (Retired) 2. Institute for Fusion Studies, Department of Physics, University of Texas at Austin (Retired) 3. MetaMaterials Inc. (Current)*

## A03: Fano-Resonance Based Nanoscale Spin-Wave Transducer, Valve and Phase Shifter in Damon-Eshbach Geometry

Kevin G. Fripp[1], Vlad D. Poimanov [2], Fedor B. Mushenok[1], Feodor Y. Ogrin[1], and Volodymyr V. Kruglyak[1] *1. Physics and Astronomy, University of Exeter, Exeter, Devon, United Kingdom; 2. Department of Physics and Technology, Donetsk National University, Donetsk, Ukraine*

## A04: High frequency modes in ferromagnetic shells for microwave applications

C. J. McKeever[1], M. M. Aziz[2], and F. Y. Ogrin[1] *1. Department of Physics and Astronomy, University of Exeter 2. College of Engineering, Mathematics, and Physical Sciences, University of Exeter*

## A05: Narrow bandpass filter based on SRR

Mohamed Hesham[1], and Sameh Osama[1], *1. Department of Electrical & Communication Engineering, The British University in Egypt.*

# B. HIGH FREQUENCY MATERIALS AND METAMATERIALS

## B01: Characterisation of Perpendicular Stationary Spin Waves in Thin Permalloy Films Using VNA-FMR

N. A. B. Johansson[1], Harry J Waring[1], Ivan Vera-Marun[2], Thomas Thomson[1] *1.School of Computer Science, University of Manchester, Manchester, M13 9PL, UK 2. School of Physics and Astronomy, University of Manchester, Manchester, M13 9PL, UK*

## B02: Chiral Magnonics: Unique Spin-Wave Phenomena Induced by a Periodic Dzyaloshinskii-Moriya Interaction

Rodolfo Gallardo[1,2], David Cortés-Ortuño[3], Tobias Schneider[4,5], Alejandro Roldán-Molina[6], Fusheng Ma[7], Kilian Lenz[4], Hans Fangohr[3,8], Jürgen Lindner[4] and Pedro Landeros[1,2] *1. Departamento de Física, Universidad Técnica Federico Santa María, Valparaíso, Chile 2. Center for the Development of Nanoscience and Nanotechnology (CEDENNA), Santiago, Chile 3. Faculty of Engineering and the Environment, University of Southampton, United Kingdom 4. Helmholtz-Zentrum Dresden – Rossendorf, Institut of Ion Beam Physics and Materials Research, Germany 5. Department of Physics, Technische Universität Chemnitz, Germany 6. Universidad de Aysén, Coyhaique, Chile 7. Magnetoelectronic Lab, School of Physics and Technology, Nanjing Normal University, China 8. European XFEL GmbH, Germany*

## B03: Double periodical planar photonic crystal with superconductive inclusions

Igor Lyubchanskii[1,2] , Sergey Tarapov[1,3,4], Ruslan Vovk[1], Aleksey Girich[4], and Anna Kharchenko[4] *1. Karazin Kharkiv National University, 4 Svobody Sq, Kharkiv, 61022, Ukraine 2. National Academy of Science of Ukraine Donetsk Physics & Technology Institute (DonPhTI), 46 Nauki Ave., Kyiv, 03142, Ukraine 3. Kharkiv National University of Radio Electronics, 14 Nauky Ave., Kharkiv, 61166, Ukraine 4. Usikov Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkov, 61085, Ukraine*

## B04: Surface states in finite-size planar photonic crystals

Sergey Tarapov,[1,2] Aleksey Girich,[1] Anna Kharchenko,[1] Jarosław W. Kłos,[3,4] Maciej Krawczyk[3] *1. Institute for Radiophysics and Electronics of NAS of Ukraine, Kharkov, Ukraine 2. Karazin Kharkiv National University, 4 Svobody Sq, Kharkiv, 61022, Ukraine 3. Faculty of Physics, Adam Mickiewicz University, Poznań, Poland 4. Institute of Physics, Greifswald University, 17489 Greifswald, Germany*

## B05: Enhanced gyromagnetic properties in doped $Mn_3O_4$-$Bi_2O_3$ NiCuZn ferrite ceramics for LTCC applications

Yan Yang[1,2], Huaiwu Zhang[1], Jie Li[1], Fang Xu[1], Gongwen Gan[1], and Dandan Wen[1] *1. State Key Laboratory of Electronic Thin Film and Integrated Devices, University of Electronic Science and Technology of China 2. College of Communication Engineering, Chengdu University of Information Technology*

## B06: High performance induction of soft magnetic composites based on Fe-Si alloys in high frequency range

Deok Hyeon Kim[1], Seok Hee Lee[1], Hyun Sung Kim[1], and Bo Wha Lee[1] *1. Department of physics & Oxide research center, Hankuk University of Foreign Studies, South Korea*

## B07: Influences of iron and oxygen vacancies on magnetic properties of $Fe_3O_4$ particles during different annealing temperature

Zhaoxia Kou,[1] Lulu Cao,[1] Wenbiao Chao,[1] Zhaocong Huang,[1] Ya Zhai,[1,2,] Biao You[2] and Jun Du[2] *1. School of Physics, Southeast University 2. National Laboratory of Solid Microstructures, Nanjing University*

## B08: Optimization of coupling strength and spin wave conversion efficiency in the magnonic directional couplers

Piotr Graczyk, Mateusz Zelent, and Maciej Krawczyk *Faculty of Physics, Adam Mickiewicz University in Poznan, Umultowska 85, 61-614 Poznan, Poland*

## B09: Reconfigurable magnonic crystals induced by arrays of superconducting vortices

O.V. Dobrovolskiy[1,2], R. Sachser[1], T. Fischer[3], V.V. Kruglyak[4], R.V. Vovk[2], V.A. Shklovskij[2], M. Huth1, B. Hillebrands[3], and A. V. Chumak[3] *1. Physikalisches Institut, Goethe-Universit¨at Frankfurt am Main, Germany 2. Physics Department, V. Karazin National University, Kharkiv, Ukraine 3. Fachbereich Physik, Technische Universität Kaiserslautern, Germany 4. School of Physics and Astronomy, University of Exeter, United Kingdom*

## B10: Symmetry and localization properties of defect modes in magnonic superlattices

Rodolfo Gallardo[1], Tobias Schneider[2,3], Alejandro Roldán-Molina[4], Manuel Langer[2,5], Alvaro Nuñez[6, 7], Kilian Lenz[2], Juergen Lindner[2], and Pedro Landeros[1, 7] *1. Departamento de Física, Universidad Técnica Federico Santa María, Avenida España 1680, Valparaíso, Chile 2. Helmholtz-Zentrum Dresden – Rossendorf, Institut of Ion Beam Physics and Materials Research, Bautzner Landstr. 400, 01328 Dresden, Germany 3. Department of Physics, Technische Universität Chemnitz, Reichenhainer Str. 70, 09126 Chemnitz, Germany 4. Universidad de Aysén, Ovispo Vielmo 62, Coyhaique, Chile 5. Paul Scherrer Institut, 5232 Villigen PSI, Switzerland 6. Departamento de Física, Facultad de Ciencias Físicas y Matemáticas, Universidad de Chile, Casilla 487-3, 8370415 Santiago, Chile 7. Center for the Development of Nanoscience and Nanotechnology (CEDENNA), 917-0124 Santiago, Chile*

## B11: Thickness and temperature dependent FMR linewidth in MgFe2O4 thin films on Si(100)

K.Mallick,[1] and P. S. Anil Kumar[1] *1. Physics Department, Indian Institute of Science, Bangalore – 560012, India*

## B12: Tunable magnon photon coupling using a BLIG ($(LuBi)_3 Fe_5O_{12}$) film and a split ring resonator

O.V. Dobrovolskiy[1,2], R. Sachser[1], T. Fischer[3], V.V. Kruglyak[4], R.V. Vovk[2], V.A. Shklovskij[2], M. Huth[1], B. Hillebrands[3], and A. V. Chumak[3] *1. Physikalisches Institut, Goethe-Universit¨at Frankfurt am Main, Germany 2. Physics Department, V. Karazin National University, Kharkiv, Ukraine 3. Fachbereich Physik, Technische Universität Kaiserslautern, Germany 4. School of Physics and Astronomy, University of Exeter, United Kingdom*

## B13: Y-type hexaferrite - synthesis, characterization and magnetically-induced reflection losses at 1-20 GHz

Tatyana Koutzarova,[1] Svetoslav Kolev,[1] Borislava Georgieva,[1] Kiril Krezhov,[1] Daniela Kovacheva,[2] Chavdar Ghelev,[1] B. Vertruyen,[3] R. Closset,[3] Lan Maria Tran,[4] and Andrej Zaleski[4] *1. Institute of Electronics, Bulgarian Academy of Sciences, 72 Tsarigradsko Chaussee, 1784 Sofia, Bulgaria 2. Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, Acad. Georgi Bonchev Str., bld. 11, 1113 Sofia, Bulgaria 3. Greenmat, Chemistry Department, University of Liege, 11 allée du 6 août, 4000 Liège, Belgium 4. Institute of Low Temperatures and Structural Research, Polish Academy of Sciences, ul. Okólna 2, 50-422 Wroclaw, Poland*

**B14: Investigation of the electromagnonic crystals based on thin-film multiferroics with the coplanar transmission line** Aleksei A. Nikitin, Vitaliy V. Vitko, Andrey A. Nikitin, Alexey B. Ustinov, and Boris A. Kalinikos *Department of Physical Electronics and Technology, St. Petersburg Electrotechnical University*

## C. MAGNETIZATION DYNAMICS AND RELAXATION

### C01: 3D FDTD-LLG modelling of magnetisation dynamics in thin film ferromagnetic structures

*Feodor Y. Ogrin,[1] Takashi Manago,[2] Sergey V. Grishin,[3] 1. School of Physics and Astronomy, University of Exeter, UK 2. Department of Applied Physics, Fukuoka University, Japan 3. Saratov State University, Russia*

### C02: Effect of annealing on tunable uniaxial magnetic anisotropy in laser ablated CoFeB thin films

A. Rathi, G. Venkat Swamy, R. K. Rakshit, R. P. Pant, and G. A. Basheed *AcSIR, CSIR-National Physical Laboratory (NPL) Campus, New Delhi - 110012, India*

### C03: Ferromagnetic linewidth measurements employing electrodynamic models of resonators containing gyromagnetic samples

Adam Pacewicz,[1] Bartłomiej Salski,[1] Paweł Kopyt,[1] and Jerzy Krupka[2] *1. Institute of Radioelectronics and Multimedia Technology, Warsaw University of Technology, 2. Institute of Microelectronics and Optoelectronics, Warsaw University of Technology*

### C04: Microwave properties of a magnetic antidot array in a bubble domain state

Angus S. Laurenson[1], Alexey I. Marchenko[2], Volodymyr N. Krivoruchko[2], Jacopo Bertolotti[1] and Volodymyr V. Kruglyak[1] *1. Department of Physics and Astronomy, University of Exeter 2. Donetsk Institute for Physics and Engineering, the National Academy of Sciences of Ukraine*

### C05: Picosecond reorientation of in-plane magnetisation within a nano-element by spin orbit torque

Paul S. Keatley,[1]* G. Mihajlović,[2] L. Wan,[2] Y.S. Choi,[2] and J. A. Katine,[2] and Robert J. Hicken[1] *1. Department of Physics and Astronomy, University of Exeter, Exeter EX4 4QL, UK 2. San Jose Research Center, HGST, a Western Digital Company, San Jose, California 95135, USA*

### C06: Robust modulation of magnetization dynamics by dilute rare-earth doping

Qian Chen,[1] Yuli Yin,[1] Jinjin Yue,[1] Zhaocong Huang,[1] Biao You,[2] Jun Du,[2] and Ya Zhai[1]* *1. School of Physics, Southeast University, Nanjing 211189, China 2. National Laboratory of Solid Microstructures, Nanjing University, Nanjing 210093, China*

## C07: Spin wave damping in a curved magnetic nanowire

A. N. Kuchko,[1,2] V.S. Tkachenko,[3] M. Krawczyk,[4] V. V. Kruglyak[5] *1. Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine 2. Institute of Magnetism of NAS of Ukraine, Ukraine 3. Faculty of Physics and Technology, Vasyl` Stus Donetsk National University, Ukraine 4. Faculty of Physics, Adam Mickiewicz University in Poznań, Poland 5. Department of Physics and Astronomy, University of Exeter*

## C08: Time-resolved X-ray detected ferromagnetic resonance measurements of a CoFe/NiO/Fe/NiFe multilayer structure

Takafumi Nakano,[1,2*] Maciej Dabrowski,[1] Qian Li,[3] Mengmeng Yang,[3] Christoph Klewe,[4] David Burn,[5] Padraic Shafer,[4] Zi Q. Qiu,[3] Gerrit van der Laan,[5] Elke Arenholz,[4] and Robert J. Hicken[1] *1. Department of Physics and Astronomy, University of Exeter 2. JSPS Overseas Research Fellow 3. Department of Physics, University of California at Berkeley 4. Advanced Light Source, Lawrence Berkeley National Laboratory 5. Magnetic Spectroscopy Group, Diamond Light Source*

## C09: Computational micromagnetics: A mathematical point of view

Bernhard Stiftner,[1*] Carl-Martin Pfeiler,[1] Michele Ruggeri,[2] Dirk Praetorius,[1] and Gino Hrkac[1,3] *1. Institute for Analysis and Scientific Computing, TU Wien, 2. Faculty of Mathematics, University of Vienna, 3. College of Engineering, Mathematics, and Physical Sciences, University of Exeter*

## C10: Dynamic properties in stadium-like particles: Effect of its form anisotropy

Eduardo Saavedra Diaz [1*] , Juan Pablo Burr[1] , Juan Luis Palma[1,2] , Juan Escrig Murua[1,2] *1. Department of Physics, University of Santiago de Chile (USACH), 917-0124 Santiago, Chile. 2. Center for the Development of Nanoscience and Nanotechnology (CEDENNA), 9170124 Santiago, Chile.*

# D. SPIN WAVES AND MAGNONICS

## D01: Antenna configuration dependence of nonreciprocity of spin waves

Koji Shibata,[1] Kenji Kasahara,[1] Kazuyuki Nakayama,[1] Volodymyr V. Kruglyak,[2] Mustafa M.Aziz,[3] and Takashi Manago[1, 2*] *1.Department of Applied Physics, Fukuoka University 2. Department of Physics and Astronomy, University of Exeter 3. College of Engineering, Mathematics and Physical Sciences, University of Exeter*

## D02: Dispersion characteristics and control of spiral spin waves in magnetic nano-patches

David Osuna Ruiz,[1*] Alastair P. Hibbins,[1] and Feodor Y. Ogrin,[1] *1. Department of Physics and Astronomy, University of Exeter*

## D03: Excitation and confinement of spin wave modes in arrays of cobalt microstripes formed on a permalloy underlayer

Sergey V. Nedukh,[1,2*] Elena V. Tartakovskaya,[3] Fedor B. Mushenok,[4] Valentin K. Sakharov,[5] Arthur S. Vakula,[1,6] Yuri V. Khivintsev,[5] Yuri A. Filimonov,[5] Ruslan V. Vovk,[2] Sergey I. Tarapov,[1,2,6] and Volodymyr V. Kruglyak[4] *1. O. Ya. Usikov Institute for Radiophysics and Electronics of NASU, Kharkiv, Ukraine 2. Karazin Kharkiv National University, Kharkiv, Ukraine 3. Institute of Magnetism, Kiev, Ukraine 4. Department of Physics and Astronomy, University of Exeter, Exeter, UK 5. Saratov Branch of Kotelnikov Institute of Radio-engineering and Electronics of RAS, Saratov, Russia 6. Kharkiv National University of Radio Electronics, Kharkiv, Ukraine*

## D04: Focusing metasurface for spin-waves in thin ferromagnetic films

M. Zelent[*1], M. Mailian[2], V. Vashistha[1], P. Graczyk[1], P. Gruszecki[1], O. Yu. Gorobest[2,3], Yu. I. Gorobest[3], M. Krawczyk[1] *1. Faculty of Physics, Adam Mickiewicz University in Poznan, Umultowska 85, Poznan, 61-614, Poland 2. Faculty of Physics and Mathematics, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", 37 Peremogy Avenue, Kyiv, 03056, Ukraine 3. Institute of Magnetism, National Academy of Sciences of Ukraine, 36-b Vernadskogo Street, Kyiv, 03142, Ukraine*

## D05: Magnetization dynamics in one-dimensional magnonic quasicrystals.

K. Szulc, F. Lisiecki, J. Rychły, J. W. Kłos, M. Zelent[1], P. Kuswik[2], H. Głowinski[2], J. Dubowik[2], M. Krawczyk[*1] *1. Faculty of Physics, Adam Mickiewicz University in Poznan, Umultowska 85, Poznan, 61-614, Poland 2. Institute of Molecular Physics, Polish Academy of Sciences,*

## D06: Phonon-magnon and magnon-phonon collision times in ferromagnetic insulators

Alexei I. Bezuglyj,[1,2] Volodymyr V. Kruglyak,[3] and Valerij A. Shklovskij[2*] *1. National Science Center, Kharkov Institute of Physics and Technology, Kharkov, Ukraine 2. Kharkov National University, Kharkov, Ukraine 3. Department of Physics and Astronomy, University of Exeter, Exeter, United Kingdom*

## D07: Photovoltage detection of spin excitations of ferromagnetic stripe and disk at low temperature

*Najla K. Almulhem* [1*], Maksym E. Stebliy [2], Alain Nogaret[1], Jean-Claude Portal[3], Alexander S. Samardak[2], Harvey E. Beere [4], and David A. Ritchie [4] *1. Department of Physics, University of Bath 2. Laboratory of thin film technology, Far Eastern Federal University 3. High Magnetic Field Laboratory, Grenoble 4. Cavendish Laboratory, University of Cambridge*

## D08: Propagation of spin wave in magnonic crystal with interface of asymmetrical properties

Yuliia I. Gusieva,[1*] Oksana Yu. Gorobets,[1, 2] Yuriy I. Gorobets,[1, 2] *1. Department of general and experimental physics, National Technical University of Ukraine "KPI", Kyiv, Ukraine. 2. Institute of Magnetism of NASU and MESU, Kyiv 03142, Ukraine*

## D09: Scattering of spin waves from an interface between a ferromagnet and a helimagnet with a Dzyaloshinskii–Moriya spiral

V. D. Poimanov[1], V. N. Krivoruchko[2], A. N. Kuchko[3,4], V. V. Kruglyak[5] *1. Donetsk National University, Donetsk, Ukraine 2. Donetsk Institute for Physics and Engineering of the NAS of Ukraine, Kyiv, Ukraine 3. Igor Sikorsky Kyiv Polytechnic Institute, Kyiv, Ukraine 4. Institute of Magnetism of NAS of Ukraine, Ukraine 5. University of Exeter, Exeter, Devon, UK*

## D10: Spin wave propagation through anisotropic interface between two antiferromagnetically coupled ferromagnets

Maryna D. Mailian,[1*] Oksana Y. Gorobets,[1,2] Yuriy I. Gorobets,[1,2] Maciej Krawczyk,[3] and Mateusz Zelent[3] *1. Faculty of Physics and Mathematics, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", 37 Peremogy ave., 03056, Kyiv, Ukraine 2. Institute of Magnetism, National Academy of Sciences of Ukraine, 36-b Vernadskogo st., 03142, Kyiv, Ukraine 3. Faculty of Physics, Adam Mickiewicz University in Poznan, Umultowska 85, Poznań, 61-614, Poland*

## D11: Spin wave scattering on a uniaxial ferromagnetic cylindrical spin lens with inhomogeneous boundaries

Serhii Reshetniak, Anna Kutrayeva *Faculty of Physics and Mathematics, National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic University", Kyiv, Ukraine*

## D12: Towards analytical theory of edge spin wave modes in in-plane magnetised magnetic nano-elements

Oliver Latcham,[1*] Jamie Le Signe,[1] David Newman,[1] Fedor B. Mushenok,[1] Carl S. Davies,[1] Volodymyr V. Kruglyak[1] *1. Department of Physics and Astronomy, University of Exeter*

## D13: Towards the study of propagating spin waves in NiFe thin films using GHz repetition rate femto-second laser pulses and Brillouin Light Scattering Microscopy

Shreyas Muralidhar[1], Ademir Aleman[1], Ahmad A. Awad[1], Dag Hanstorp[1] and Johan Åkerman[1] *1. Department of Physics, University of Gothenburg, SE 412 96, Gothenburg, Sweden*

# E. NONLINEAR PHENOMENA

## E01: High-order resonances of silver plasmonic nanoantennas

Maciej Dąbrowski,[1,2*] Yanan Dai,[1] and Hrvoje Petek[1] *1. Department of Physics and Astronomy, University of Pittsburgh 2. Department of Physics and Astronomy, University of Exeter*

# F. SPIN TORQUE OSCILLATORS

## F01: Controlling magnetization dynamics of microwave oscillator by magnetic field feedback

Hanuman Singh[1*], Arnab Bose[1], Swapnil Bhuktare[1], Akio Fukushima[2], Kay Yakushiji[2], Shinji Yuasa[2], Hitoshi Kubota[2], Ashwin. A. Tulapurkar[1] *1. Department of Electrical Engineering, Indian Institute of Technology Bombay, Powai, Mumbai-400 076, India 2. National Institute of Advanced Industrial Science and Technology (AIST), Spintronics Research Center, Ibaraki -305-8568, Japan*

## F02: Optimization of magnetic tunnel junction based spin-torque oscillators with uniform magnetization for microwave applications

C. Murapaka,[1] P. Sethi,[1] A. Litvinenko,[1] K. Merazzo-Jaimes,[1] E. Jimenez-Romero,[1] J. Hem,[1] L. Vila,[1] E. Gautier[1], M. C. Cyrille,[2] R. Ferreira,[3] and U. Ebels [2] *1. Univ. Grenoble Alpes, CEA, CNRS, INAC, SPINTEC, F-38000 Grenoble, France 2. CEA, LETI, F-38000 Grenoble, France 3. International Iberian Nanotechnology Laboratory (INL), Braga, Portugal*

## F03: Phase locked loop operation of spin torque oscillators using custom integrated circuits in 0.18 µm BiCMOS

M. Kreissig,[1] P. Sethi,[2] S. Wittrock,[3] A. Litvinenko,[2] C. Murapaka,[2] K. Merazzo-Jaimes,[2] E. Jimenez-Romero,[2] J. Hem,[2] R. Lebrun,[3] A. Jenkins,[4] L. Vila,[2] M. C. Cyrille,[5] R. Ferreira,[4] P. Bortolotti,[6] V. Cros,[3] F. Ellinger,[1] and U. Ebels[2] *1. Technische Universität, Dresden, Germany 2.Univ. Grenoble Alpes, CEA, CNRS, INAC, SPINTEC, F-38000 Grenoble, France 3. Unité Mixte de Physique CNRS, Thales, Univ. Paris-Sud, Université Paris-Saclay, Paris, France 4. International Iberian Nanotechnology Laboratory (INL), Braga, Portugal 5. CEA, LETI, F-38000 Grenoble, France 6. THALES TRT, Palaiseau, France*

## F04: Superposition of precessional modes within spin Hall nano-oscillators

T. M. Spicer,[1] P. S. Keatley,[1] M. Dvornik,[2] P. Dürrenfeld,[2] A. Houshang,[2] M. Ranjbar,[2] A. A. Awad,[2] R. K. Dumas,[2] J. Åkerman,[2,3,4] V. V. Kruglyak[1] and R. J. Hicken[1] *1. Department of Physics and Astronomy, University of Exeter, Stocker Road, Exeter, EX4 4QL, UK 2. Physics Department, University of Gothenburg, Fysikgränd 3, 412 96 Gothenburg, Sweden 3. Materials and Nano Physics, School of ICT, KTH Royal Institute of Technology, Electrum 229, 164 60 Kista, Sweden 4. NanOsc AB, Electrum 205, 164 40 Kista, Sweden*

## F05: Time resolved imaging of coupled nano-contact spin transfer vortex oscillators

Erick. O. Burgos Parra,[1*] Paul. S. Keatley,[1] Sohrab. R. Sani,[2] Johan. Åkerman,[3] and Robert J. Hicken[1] *1. Department of Physics and Astronomy, University of Exeter 2. Materials Physics, KTH-Royal Institute of Technology, Kista, Sweden 3. The Physics Department, University of Gothenburg, Gothenburg, Västra Götaland, Sweden*

# G. SPINTRONICS AND SPIN WAVE DEVICES

## G01: Propagation of spin waves through an interface between ferromagnetic and antiferromagnetic materials

Oksana Busel,[1*] Oksana Gorobets,[1] Yuri Gorobets[1,2] *1. National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Faculty of Mathematics and Physics, Kyiv, Ukraine 2. Institute of Magnetism NAS and MES of Ukraine, Kyiv, Ukraine*

# H. RF AND MICROWAVE INTEGRATED DEVICES

## H01: A practical application of using a microwave technique to determine the blood glucose level

Ayodunni A Oloyo,[1*] Zhirun Hu[1] *1. School of Electrical and Electronics Engineering, University of Manchester.*

## H02: Magnetic nanoparticles: microwave detectors

Jean-Claude S. Levy,[1*] Philippe Depondt,[2] *1. MPQ, CNRS & University Paris Diderot, Paris, France 2. INSP; CNRS&UPMC, Paris France*