



# GEMaC

Groupe d'Étude  
de la Matière Condensée

## FOX - PUBLICATIONS 2013-2017

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2017

Lien Ung T.P., Quélin X., Berini B., Colas des Francs G., Nasilowski M., Dubertret B., Hermier J.-P., Buil S.

**Probing the hot spot properties of semicontinuous gold films through the fluorescence polarization of CdSe/CdS colloidal nanocrystals**

*Journal of Nanophotonics 11, 046005 (2017)*

Temahuki N., Gillet R., Sallet V., Jomard F., Chikoidze E., Dumont Y., Pinault-Thaury M.-A., Barjon J.

**New Process for Electrical Contacts on (100) N-type Diamond**

*Phys. Status Solidi A 214, 1700466 (2017)*

Chikoidze E., Fellous A., Perez-Tomas A., Sauthier G., Tchelidze T., Ton-That C., Thanh Huynh T., Phillips M., Russell S., Jennings M., Berini B., Jomard F., Dumont Y.

**P-type -gallium oxide: A new perspective for power and optoelectronic devices**

*Materials Today Physics 3, 118 (2017)*

Goncalves F. J. T., Paterson G. W., McGrouther D., Drysdale T., Togawa Y., Schmool D. S., Stamps R. L.

**Probing microwave fields and enabling in-situ experiments in a transmission electron microscope**

*Scientific Reports 7, 11064 (2017)*

Sene S., Marcos-Almaraz M. T., Menguy N., Scola J., Volatron J., Rouland R., Grenèche J.-M., Miraux S., Menet C., Guillou N., Gazeau F., Serre C., Horcajada P., Steunou N.

**Maghemite-nanoMIL-100(Fe) Bimodal Nanovector as a Platform for Image-Guided Therapy**

*Chem 3, 303 (2017)*

Stenger I., Schué L., Boukhicha M., Berini B., Plaçais B., Loiseau A., Barjon J.

**Low frequency Raman spectroscopy of few-atomic-layer thick hBN crystals**

*2D Materials 4, n° 3 (2017)*

Nadal E., Barros N., Glenat H., Laverdant J., Schmool D.S., Kachkachi H.

**Plasmon-enhanced diraction in nanoparticle gratings fabricated by in situ photo-reduction of gold chloride doped polymer thin films by laser interference patterning**

*J. Mater. Chem C 5, 3553 (2017)*

Teherani F.H., Rogers D.J., Sandana V.E., Bove P., Ton-That C., Lem L.L.C., Chikoidze E., Neumann-Spallart M., Dumont Y., Huynh T., Phillips M.R., Chapon P., McClintock R., Razeghi M.

**A Study into the Impact of Sapphire Substrate Orientation on the Properties of Nominally-Undoped beta-Ga<sub>2</sub>O<sub>3</sub> Thin Films Grown by Pulsed Laser Deposition**

*Proc. of SPIE 10105, 10105R (2017)*

Popova E., Deb M., Bocher L., Gloter A., Stéphan O., Warot-Fonrose B., Berini B., Dumont Y., Keller N.

**Interplay between epitaxial strain and low dimensionality effects in a ferrimagnetic oxide**

*J. Appl. Phys. 121, 115304 (2017)*

Popova E., Shengelaya A., Daraselia D., Japaridze D., Cherifi-Hertel S., Bocher L.,

Gloter A., Stéphan O., Dumont Y., Keller N.

**Bismuth iron garnet Bi<sub>3</sub>Fe<sub>5</sub>O<sub>12</sub>: a room temperature magnetoelectric material**

*Appl. Phys. Lett.* 110, 142404 (2017)

<https://arxiv.org/abs/1612.07531>

Scola J., Benamar A., Berini B., Jomard F., Dumont Y.

**Direct measurement of oxygen stoichiometry in perovskite films**

*J. Phys. D: Appl. Phys.* 50, 045302 (2017)

2016

Backes S., Rodel T.C., Fortuna F., Frantzeskakis E., Le Fevre P., Bertran F., Kobayashi M., Yukawa R., Mitsuhashi T., Kitamura M., Horiba K., Kumigashira H., Saint-Martin R., Fouchet A., Berini B., Dumont Y., Kim A.J., Lechermann F., Jeschke H.O., Rozenberg M. J., Valenti R., Santander-Syro A.F.

**Hubbard band versus oxygen vacancy states in the correlated electron metal SrVO<sub>3</sub>**

*Phys. Rev. B* 94, 241110(R) (2016)

Papierska J., Ciechan A., Bogusawski P., Boshta M., Goma M.M., Chikoidze E., Dumont Y., Drabinska A., Przybylinska H., Gardias A., Szczytko J., Twardowski A., Tokarczyk M., Kowalski G., Witkowski B., Sawicki K., Pacuski W., Nawrocki M., Suffczynski J.

**Fe dopant in ZnO: 2+ versus 3+ valency and ion-carrier s,p-d exchange interaction**

*Phys. Rev. B* 94, 224414 (2016)

Goncalves F.J.T., Paterson G.W., Stamps R.L., O'Reilly S., Bowman R., Gubbiotti G., Schmool D.S.

**Competing anisotropies in exchange-biased nanostructured thin films**

*Phys. Rev. B* 94, 054417 (2016)

Fouchet A.

**HDR: Study of electronic phases in oxide heterostructures: towards 2D systems**

*Defended on 30th of September 2016*

Popova E.

**HDR: Functional magnetic oxides for information treatment: relation between structure and physical properties**

*Defended on 23rd of June 2016*

Cano M., Nunez-Lozano R., Dumont Y., Larpent C., de la Cueva-Mendez G.

**Synthesis and characterization of multifunctional superparamagnetic iron oxide nanoparticles (SPION)/C60 nanocomposites assembled by fullerene-amine click chemistry**

*RSC Adv. 6, 70374 (2016)*

Ridier K., Aureau D., Berini B., Dumont Y., Keller N., Vigneron J., Etcheberry A., Fouchet A.

**Enhanced depth profiling of perovskite oxide: low defect layers induced in SrTiO<sub>3</sub> by argon cluster sputtering**

*J. Phys. Chem. C (2016)*

Fouchet A., Allain M., Berini B., Popova E., Janolin P.-E., Guiblin N., Chikoidze E., Scola J., Hrabovsky D., Dumont Y., Keller N.

**Study of the electronic phase transition with low dimensionality in SrVO<sub>3</sub> thin films**

*Materials Science and Engineering B 212, 7 (2016)*

Berini B., Demange V., Bouttemy M., Popova E., Keller N., Dumont Y., Fouchet A.

**Control of High Quality SrVO<sub>3</sub> Electrode in Oxidizing Atmosphere**

*Adv. Mater. Interfaces 1600274 (2016)*

Chikoidze E., von Bardeleben H.J., Aikawa K., Shigematsu E., Kaneko K., Fujita S., Dumont Y.

**Electrical, optical, and magnetic properties of Sn doped alpha-Ga<sub>2</sub>O<sub>3</sub> thin films**

*J. Appl. Phys. 120, 025109 (2016)*

Koene B., Deb M., Popova E., Keller N., Rasing T., Kirilyuk A.

**Spectrally resolved optical probing of laser induced magnetization dynamics in Bismuth Iron Garnet**

*J. Phys.: Condens. Matter 28, 276002 (2016)*

Bezverkhy I., Popova E., Geoffroy N., Herbst F., Bellat J.-P.

**Preparation of magnetic composites of MIL-53(Fe) or MIL-100(Fe) via partial transformation of their framework into gamma-Fe<sub>2</sub>O<sub>3</sub>**

*J. Mater. Chem. A 4, 8148 (2016)*

Chikoidze E., Boshta M., Gomaa M., Tchelidze T., Daraselidze D., Japaridze D.,

Shengelaya A., Dumont Y., Neumann-Spallart M.

**Control of p-type conduction in Mg doped monophase CuCrO<sub>2</sub> thin layers**

*J. Phys. D: Appl. Phys.* 49, 205107 (2016)

Schué L., Berini B., Betz A.C., Plaçais B., Ducastelle F., Barjon J., Loiseau A.

**Dimensionality effect on the luminescence properties of hBN**

*Nanoscale* 8, 6986 (2016)

Demchenko A., Chang Y., Chikoidze E., Berini B., Lefèvre C., Roulland F., Ulhaq-Bouillet C., Versini G., Barre S., Leuvrey C., Favre-Nicolin V., Boudet N., Zafeiratos S., Dumont Y., Viart N.

**Tuning the conductivity type in a room temperature magnetic oxide: Ni-doped Ga<sub>0.6</sub>Fe<sub>1.4</sub>O<sub>3</sub> thin films**

*RSC Advances* 6, 28248 (2016)

Hrabovsky D., Berini B., Fouchet A., Aureau D., Keller N., Etcheberry A., Dumont Y.

**Strontium titanate (100) surfaces monitoring by high temperature in-situ ellipsometry**

*Appl. Surf. Sci.* 367, 307 (2016)

Thomas G., Demoisson F., Chassagnon R., Popova E., Millot N.

**One-step continuous synthesis of functionalized magnetite nanoflowers**

*Nanotechnology* 27, 135604 (2016)

Baczko K., Fensterbank H., Berini B., Bordage N., Clavier G., Méallet-Renault R., Larpent C., Allard E.

**Azide-Functionalized Nanoparticles as Quantized Building Block for the design of soft-soft fluorescent polystyrene core – PAMAM Shell Nanostructures**

*J. Polym. Sci. A1* 54, 115 (2016)

Aureau D., Ridier K., Berini B., Dumont Y., Keller N., Vigneron J., Bouttemy M., Etcheberry A., Fouchet A.

**Advanced analysis tool for X-ray photoelectron spectroscopy profiling: cleaning of perovskite SrTiO<sub>3</sub> oxide surface using argon cluster ion source**

*Thin Solid Films* 601, 89 (2016)

2015

Novikova A., Fonda E., Dumont Y., Zheng Y., Demaille D., Vidal F.

**Structural stability of cobalt ferromagnetic nanowires embedded in CeO<sub>2</sub>/SrTiO<sub>3</sub> (001) after oxidative/reductive annealing**

*J. Phys. D: Appl. Phys.* 48, 235001 (2015)

Koene B., Deb M., Popova E., Keller N., Rasing T., Kirilyuk A.

**Excitation of magnetic precession in bismuth iron garnet via a polarization-independent impulsive photomagnetic effect**

*Phys. Rev. B* 91, 184415 (2015)

Scola J., Tassart X., Vilar C., Jomard F., Dumas E., Veniaminova Y., Boullay P., Gascoin S.

**Microstructure and electrical resistance evolution during sintering of a Ag nanoparticle paste**

*J. Phys. D: Appl. Phys.* 48, 145302 (2015)

Raghavender A.T., Nguyen H.H., Chikoidze E., Dumont Y., Kurisu M.

**Effect of zinc doping on the structural and magnetic properties of nickel ferrite thin films fabricated by pulsed laser deposition technique**

*J. Magn. Magn. Mater.* 378, 358 (2015)

Akaiwa K., Kaneko K., Fujita S., Chikoidze E., Dumont Y.

**Room temperature ferromagnetism in conducting alpha-(In<sub>1-x</sub>Fe<sub>x</sub>)<sub>2</sub>O<sub>3</sub> alloy films**

*Appl. Phys. Lett.* 106, 062405 (2015)

2014

Chikoidze E., Dumont Y., Popova E., Keller N., Shumilin A., Kozub V., Warot-Fonrose B.

**Large room temperature magneto-resistance in magnetically disordered Fe<sub>1.5</sub>TiO<sub>5</sub>(3- $\delta$ ) thin films**

*World Journal of Condensed Matter Physics* 4, 250 (2014)

<http://dx.doi.org/10.4236/wjcmp.2014.44028>

Boshta M., Chikoidze E., Sayed M. H., Vilar C., Berini B., Dumont Y.

**Effect of substrate on structural and transport properties of sprayed Fe:ZnO polycrystalline thin films**

*J. Mater. Sci.* 49, 7943 (2014)

<http://dx.doi.org/10.1007/s10853-014-8452-4>

Khadro B., Baroudi I., Goncalves A.-M., Berini B., Pegot B., Nouar F., Ngoc Ha Le T., Ribot F., Gervais C., Carn F., Cadot E., Mousty C., Simonnet-Jégata C., Steunou N.  
**Interfacing a heteropolytungstate complex and gelatin through a coacervation process: design of bionanocomposite films as novel electrocatalysts**

*J. Mater. Chem. A* 2, 9208 (2014)

<http://dx.doi.org/10.1039/c4ta01142b>

Wright K., d'Aboville E., Scola J., Margola T., Toffoletti A., De Zotti M., Crisma M., Formaggio F., Toniolo C.

**A Quaternary Nitronyl Nitroxide alpha-Amino Acid: Synthesis, Configurational and Conformational Assignments, and Physicochemical Properties**

*Eur. J. Org. Chem.* 8, 1741 (2014)

<http://dx.doi.org/10.1002/ejoc.201301765>

Bruno F. Y., Valencia S., Abrudan R., Dumont Y., Carretero C., Bibes M., Barthelemy A.  
**Probing the metal-insulator transition in nickelates using soft x-ray absorption spectroscopy**

*Appl. Phys. Lett.* 104, 021920 (2014)

<http://dx.doi.org/10.1063/1.4861132>

Pierret A., Loayza J., Berini B., Betz A., Plaçais B., Ducastelle F., Barjon J., Loiseau A.  
**Excitonic recombinations in hBN: From bulk to exfoliated layers**

*Phys. Rev. B* 89, 035414 (2014)

<http://dx.doi.org/10.1103/PhysRevB.89.035414>

Mantovan R., Vangelista S., Wiemer C., Lamperti A., Tallarida G., Chikoidze E., Dumont Y., Fanciulli M.

**Synthesis of multiferroic Er-Fe-O thin films by atomic layer and chemical vapor deposition**

*J. Appl. Phys.* 115, 17D907 (2014)

<http://dx.doi.org/10.1063/1.4865774>

2013

Bocher L., Popova E., Nolan M., Gloter A., Chikoidze E., March K., Warot-Fonrose B., Berini B., Stéphan O., Keller N., Dumont Y.

**Comprendre la conductivité électronique d'un oxyde magnétique grâce à une microscopie électronique résolue à l'atome près**

*Actualités de l'INP*, 4 novembre 2013

Bruno F. Y., Rushchanskii K. Z., Valencia S., Dumont Y., Carretero C., Jacquet E., Abrudan R., Bluegel S., Lezaic M., Bibes M., Barthelemy A.

**Rationalizing strain engineering effects in rare-earth nickelates**

*Phys. Rev. B* 88, 195108 (2013)

<http://dx.doi.org/10.1103/PhysRevB.88.195108>

Munn A. S., Clarkson G. J., Millange F., Dumont Y., Walton R. I.

**M(II) (M = Mn, Co, Ni) variants of the MIL-53-type structure with pyridine-N-oxide as a co-ligand**

*CrystEngComm* 15, 9679 (2013)

<http://dx.doi.org/10.1039/c3ce41268g>

Bocher L., Popova E., Nolan M., Gloter A., Chikoidze E., March K., Warot-Fonrose B., Berini B., Stéphan O., Keller N., Dumont Y.

**Direct evidence of Fe<sup>2+</sup>/Fe<sup>3+</sup> charge ordering in the ferrimagnetic hematite-ilmenite Fe<sub>1.35</sub>Ti<sub>0.65</sub>O<sub>3</sub>- thin films**

*Phys. Rev. Lett.* 111, 167202 (2013)

<http://dx.doi.org/10.1103/PhysRevLett.111.167202>

Hong N. H., Benali Kanoun M., Goumri-Said S., Song J.-H., Chikoidze E., Dumont Y., Ruyter A., Kurisu M.

**The origin of magnetism in transition metal-doped ZrO<sub>2</sub> thin films: experiment and theory**

*J. Phys.: Condens. Matter* 25, 436003 (2013)

<http://dx.doi.org/10.1088/0953-8984/25/43/436003>

Stenger I., Pinault-Thaury M.-A., Kociniowski T., Lusson A., Chikoidze E., Jomard F., Dumont Y., Chevallier J., Barjon J.

**Impurity-to-band activation energy in phosphorus doped diamond**

*J. Appl. Phys.* 114, 073711 (2013)

<http://dx.doi.org/10.1063/1.4818946>

Sahu B. N., Sahoo S. C., Venkataramani N., Prasad S., Krishnan R., Kostylev M., Stamps R. L.

**Magnetic and FMR Study on CoFe<sub>2</sub>O<sub>4</sub>/ZnFe<sub>2</sub>O<sub>4</sub> Bilayers**

*IEEE Trans. Magn.* 49(7), 4200 (2013)

<http://dx.doi.org/10.1109/TMAG.2013.2251327>

Bohra M., Prasad S., Venkataramani N., Sahoo S. C., Kumar N., Krishnan R.

**Low Temperature Magnetization Studies of Nanocrystalline Zn-Ferrite Thin Films**

*IEEE Trans. Magn.* 49(7), 4249 (2013)

<http://dx.doi.org/10.1109/TMAG.2013.2239969>

Boudon J., Paris J., Bernhard Y., Popova E., Decréau R.A., Millot N.

**Magneto-Optical Nanomaterial: a SPIO-Phthalocyanine scaffold built step-by-step towards bimodal imaging**

*Chem. Commun.* 49, 7394 (2013)

<http://dx.doi.org/10.1039/c3cc41898g>

Bonilla F. J., Novikova A., Vidal F., Zheng Y., Fonda E., Demaille D., Schuler V., Coati A., Vlad A., Garreau Y., Sauvage-Simkin M., Dumont Y., Hidki S. Etgens V. H.

**Combinatorial Growth and Anisotropy Control of Self-Assembled Epitaxial Ultrathin Alloy Nanowires**

*ACS Nano* 7(5), 4022 (2013)

<http://dx.doi.org/10.1021/nn4000308>

Deb M., Popova E., Fouchet A., Keller N.

**Full spin polarization of complex ferrimagnetic bismuth iron garnet probed by magneto-optical Faraday spectroscopy**

*Phys. Rev. B* 87, 224408 (2013)

<http://dx.doi.org/10.1103/PhysRevB.87.224408>

Chikoidze E., Tchelidze T., Popova E., Maso P., Ponjavidze, Keller N., Dumont Y.

**Conductivity type inversion in wide band gap antiferromagnetic FeTiO<sub>3</sub>**

*Appl. Phys. Lett.* 102, 122112 (2013)

<http://dx.doi.org/10.1063/1.4798537>

Chikoidze E., Boshta M., Sayed M.H., Dumont Y.

**Large room temperature magnetoresistance of transparent Fe and Ni doped ZnO thin films**

*J. Appl. Phys.* 113, 043713 (2013)

<http://dx.doi.org/10.1063/1.4775769>

Popova E., Franco Galeano A.F., Deb M., Warot-Fonrose B., Kachkachi H., Gendron F., Ott F., Berini B., Keller N.

**Magnetic anisotropies in ultrathin bismuth iron garnet films**

*J. Magn. Magn. Mater.* 335, 139 (2013)

<http://dx.doi.org/10.1016/j.jmmm.2013.02.003>