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+33 7 69 90 66 07
14/01/1989, Married
French nationality, driving license

PHD IN PHYSICS –EUROPEAN MSc ENGINEER IN MATERIAL SCIENCE
8 YEARS OF EXPERIENCE IN SURFACE ENGINEERING
SPEAKING 5 LANGUAGES

RESEARCH

Since
October 2018

RESEARCH FELLOW

*International Reseach Center of Nanophotonics and Metamaterials
(Metalab)*

ITMO University, Saint-Petersburg, Russia

*Synergy of PlasmA and laseR: the Key of the new generation of
Smart nanomaterials SPARKS*

- ✓ Development of non-equilibrium processes for the synthesis of new nanomaterials for Nanophotonics
- ✓ Deputy head of the « Russian French Laboratory of Hybrid Crystals Nanophotonics”

SINCE
MARCH 2017:

POST-DOCTORAL RESEARCH ASSOCIATE

*Department of Chemistry and Physics of Surfaces and Solids
Institut Jean Lamour Nancy, France*

*“Catalytic Effect Engineering by Nanostructures:
Next-generation Anode-materials for Lithium Ion Batteries”*

- ✓ Production of Nanoparticles by Electric Discharges in Liquids
- ✓ Time resolved Plasma Diagnostics
- ✓ Collaboration with Singapore University of Technology & Design, ITMO University, Belarus Academy of Science
- ✓ Supervision of a PhD student and a MSc student
- ✓ Representing the Laboratory at the “Campus France” Meeting on the French International Policy on Research and Education

OCTOBER 2014

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FEBRUARY 2017

POST-DOCTORAL RESEARCH ASSOCIATE

*Plasma laboratory – Department of Physical Sciences
The Open University, Milton Keynes, United Kingdom*

“Modelling of Magnetron Sputtering for High Value Manufacturing”

- ✓ Development of a Magnetron sputtering chamber
- ✓ Implementation of plasma diagnostic devices (Magnetic field measurement, Hair-pin probe, Wavelength filtered imaging, Ion and electron energy analysing, Optical emission Spectroscopy)
- ✓ Collaboration with industrial partners (Cobham Ltd and Teer Coatings)
- ✓ Participation to the elaboration of an on-line plasma experiment
- ✓ Supervision of a MSc student and a PhD students

VISITING RESEARCHER

OCTOBER 2014

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APRIL 2016

*Department of Materials Science and Engineering
University of Cambridge, United Kingdom*

"Characterisation of single Plasma-Electrolytic discharge"

- ✓ Conducting experiment campaigns (2-4 weeks/year)
- ✓ Implementation of High-speed Camera imaging for characterization of small size and short lived discharges event
- ✓ Lead of the project *"Plasma Electrolytic Oxidation: Insights into single discharges and magnetic effects"* (Santander Research Funding – £5000)

2011-2014:

PHD STUDENT IN PLASMA PHYSICS AND APPLICATIONS

*Department of Chemistry and Physics of Surfaces and Solids
Institut Jean Lamour Nancy, France*

"Micro-discharges in aqueous media: the case of Plasma Electrolytic Oxidation"

- ✓ Specialized in plasma-assisted surface treatment of materials
- ✓ Independent user of SEM, EDS, XRD, AFM, Optical Emission spectrometer, Ultra High speed camera and photomultiplier
- ✓ Occasional user of SIMS, TEM, X-Ray Tomography, Raman Spectroscopy
- ✓ 6 month experience in NUST "MISiS", Moscow, Russia

EDUCATION

MSc in EUROPEAN SCHOOL OF MATERIAL SCIENCE AND ENGINEERING (EEIGM)

2006 – 2011:

2006 – 2009:

EEIGM – NANCY, FRANCE

General scientific background focused on material science including:

- ✓ Continuum Mechanics, Fracture and Fatigue, Numerical Mechanics
- ✓ Metallurgy, Polymer physics and chemistry, ceramics, composites
- ✓ Material forming techniques and surface treatment
- ✓ Characterization of materials

2010:

ERASMUS SEMESTER IN SCHOOL OF INDUSTRIAL ENGINEERING OF BARCELONA (ETSEIB) BARCELONA, SPAIN

- ✓ Advanced courses in metallurgy, corrosion and fracture mechanics

2010 – 2011:

SEMESTER RESEARCH INTERNSHIP IN MOSCOW INSTITUTE OF STEELS AND ALLOYS (MISIS) – MOSCOW, RUSSIA

"Preparation of protective and decorative coatings on the surface of aluminium alloys using Plasma Electrolytic Oxidation"

- ✓ Surface treatment for both tribological and corrosion protection
- ✓ Discovery of a new culture and other industrial and research backgrounds

2011:

INDUSTRIAL INTERNSHIP – THALES ELECTRON DEVICES - THONON-LES - BAINS, FRANCE

"Optimization of Electrolytic coating process of DESY - XFEL power coupler"

- ✓ Check and improve performance of coating producing techniques
- ✓ Prepare mass production, numerical designing of production tools
- ✓ Design and automate coating quality control procedures

TEACHING

PART-TIME ASSISTANT LECTURER

Mines Nancy, Université de Lorraine, France

**SINCE
SEPTEMBER
2017:**

- ✓ Full teaching service (192 hours planned)
- ✓ Lectures on Materials Science, Metallurgy, Multiscale Mechanics, Thermodynamics, Statistical Physics

2015-2016

SUPERVISOR

The Open University, Milton Keynes, UK

- ✓ Supervision of 2 MSc students
 - Development of a Plasma remote control experiment
 - Development of a High frequency Plasma Electrolysis cell
- ✓ Supervision of a PhD student for a 4 months research stay (from Sept. 2016) on characterisation of PEO coatings

2013:

PART-TIME ASSISTANT READER

Université de Lorraine, Nancy, France

- ✓ Lecturer in Ceramics, Material Mechanics, Metallurgy and Polymer Physics in 3rd course of Material Science and Engineering Bachelor curriculum
- ✓ Supervision of three 1st year students for their bibliographic project

2008-2009

VOLUNTEER

- ✓ 20 hours of Physics teaching in a class of students from disadvantaged backgrounds
- ✓ Organising of a science promotion public event "Fête de la science"

2008-2012

PRIVATE TUTOR

- ✓ Private tutoring in Mathematics, Physics and Chemistry for 12 to 18 years old pupils

MISCELLEANOUS

OTHER WORK EXPERIENCE, RESPONSIBILITIES & MEMBERSHIPS

2015-...

Member of the Material Research Society (MRS)

2014-...

Member of COST TD1208 (*Electric discharges with liquids for future applications*)

2013-2014:

Elected member of Laboratory Council - Institut Jean Lamour-Nancy, France

2009:

2-month trial internship at Arcelor Mittal - Gandrange, France

2008:

2-month trial internship at Krone G&T – Berlin, Germany

2008 – 2010:

President of "EEIGM Gala Association" (Budget: € 18,000), in charge of final graduation ceremony organization

LANGUAGES

French:

Mother tongue

English:

C1 level

Russian:

B2 level, daily use

German:

B2 (Passed Zertificat Deutsch in 2006)

Spanish:

B1-B2 level

SKILLS AND INTERESTS

Software:

Office Package, OriginPro, Matlab, Opera 3D, AutoCad, SAP, Abacus

Hobbies:

Literature, Geopolitics, Opera, History, Handball

Travels:

Fiji Islands, Romania, Russia, Turkey, Italy, Spain, Germany, Greece,

Peer-reviewed papers

- ✓ J Martin, AV Nominé, J Stef, **A Nominé**, JX Zou, G Henrion, T Grosdidie
The influence of metallurgical state of substrate on the efficiency of plasma electrolytic oxidation (PEO) process on magnesium alloy
Materials & Design 178 (2019) 107859 (**IF = 5.770**)
<https://doi.org/10.1016/j.matdes.2019.107859>
- ✓ J Martin, **A Nominé**, V Ntomprougkidis, S Migot, S Bruyère, F Soldera, T Belmonte, G Henrion
Formation of a metastable nanostructured mullite during Plasma Electrolytic Oxidation of aluminium in "soft" regime
Materials & Design (2019) 107977 (**IF = 5.770**)
<https://doi.org/10.1016/j.matdes.2019.107977>
- ✓ L. Mingabudinova, A. Zalogina, A. Krasilin, M. Petrova, P. Trofimov, Y. Mezenov, E. Ubyivovk, P. Lönnecke, A. Nominé, J. Ghanbaja, T. Belmonte, V. Milichko
Laser printing of optically resonant hollow crystalline carbon nanostructures from 1D and 2D metal-organic frameworks
Nanoscale11 (2019) 10155-10159 (**IF = 6.97**)
<https://doi.org/10.1039/C9NR02167A>
- ✓ V Ntomprougkidis, J Martin, **A Nominé**, G Henrion
Sequential run of the PEO process with various pulsed bipolar current waveforms
Surface & Coatings Technology (2019) 107977 (**IF = 3.192**)
<https://doi.org/10.1016/j.surfcoat.2019.06.057>
- ✓ M. Trad, **A. Nominé**, N. Tarasenko, J. Ghanbaja, C. Noël, M. Tabbal, T. Belmonte
Synthesis of Ag-Cd alloy nanoparticles by nanosecond pulsed-discharge in liquid nitrogen: A way to understand alloying in high pressure discharges
Frontiers of Chemical Science and Engineering- (2019) - in press (**IF = 2.809**)
- ✓ A. A Krasilin, E. K Khrapova, **A. Nominé**, J. Ghanbaja, T. Belmonte, V. V Gusarov
Cations redistribution along the spiral of Ni-doped phyllosilicate nanoscrolls: energy modelling and STEM/EDS study
ChemPhysChem 20 (2019) 719– 726 (**IF = 3.077**)
<https://onlinelibrary.wiley.com/doi/full/10.1002/cphc.201801144>
doi.org/10.1002/cphc.201801144
- ✓ I. Levchenko, K. Bazaka, O. Baranov, R.M. Sankaran, **A. Nominé**, T. Belmonte, Shuyan Xu
Lightning under water: Diverse reactive environments and evidence of synergistic effects for material treatment and activation
Applied Physics Reviews, 5 (2018) 021103 (**IF = 12.750**)
<https://aip.scitation.org/doi/full/10.1063/1.5024865>
doi: 10.1063/1.5024865
- ✓ **A. Nominé** A.V. Nominé, N. Stj. Braithwaite, T. Belmonte, G. Henrion
High-Frequency-Induced Cathodic Breakdown during Plasma Electrolytic Oxidation
Physical Review Applied 8 (2017) 031001 (**IF = 4.532**)
<https://journals.aps.org/prapplied/abstract/10.1103/PhysRevApplied.8.031001>
doi: 10.1103/PhysRevApplied.8.031001

- ✓ J. Martin, **A. Nominé**, F. Brochard, J.-L. Briançon, C. Noël, T. Czerwicz, G. Henrion, T. Belmonte
Effect of individual discharge cascades on the microstructure of plasma electrolytic oxidation coatings
Applied Surface Science 410 (2017) 29-41 **(IF=5.155)**
<https://www.sciencedirect.com/science/article/pii/S0169433216315422>
doi: 10.1016/j.apsusc.2016.07.106

- ✓ SC Troughton, **A. Nominé**, J. Dean, TW Clyne
Effect of individual discharge cascades on the microstructure of plasma electrolytic oxidation coatings
Applied Surface Science 389 (2016) 260-269 **(IF= 5.155)**
<https://www.sciencedirect.com/science/article/pii/S0169433216315422>
doi: 10.1016/j.apsusc.2016.07.106

- ✓ **A. Nominé**, J. Martin, C. Noël, G. Henrion, T. Belmonte, I.V. Bardin, P. Lukeš
Surface Charge at the Oxide/Electrolyte Interface: Toward Optimization of Electrolyte Composition for Treatment of Aluminum and Magnesium by Plasma Electrolytic Oxidation
Langmuir, 32 (2016) 1405–1409 **(IF = 3.683)**
<https://pubs.acs.org/doi/abs/10.1021/acs.langmuir.5b03873>
DOI: 10.1021/acs.langmuir.5b03873

- ✓ SC. Troughton, **A. Nominé**, AV. Nominé, G. Henrion, TW. Clyne
Synchronised electrical monitoring and high speed video of bubble growth associated with individual discharges during plasma electrolytic oxidation
Applied Surface Science, 359 (2015)405-411 **(IF=5.155)**
<https://www.sciencedirect.com/science/article/pii/S016943321502543X>
doi:10.1016/j.apsusc.2015.10.124

- ✓ **A. Nominé**, SC. Troughton, AV. Nominé, G. Henrion, TW .Clyne
High speed video evidence for localised discharge cascades during plasma electrolytic oxidation
Surface & Coatings Technology 269 (2015) 125–130 **(IF =3.192)**
<https://www.sciencedirect.com/science/article/pii/S0257897215000778>
doi: 10.1016/j.surfcoat.2015.01.043

- ✓ **A. Nominé**, J. Martin, G. Henrion, T. Belmonte
Effect of cathodic micro-discharges on oxide growth during plasma electrolytic oxidation (PEO)
Surface & Coatings Technology 269 (2015) 131–137 **(IF =3.192)**
<https://www.sciencedirect.com/science/article/pii/S0257897215001334>
doi: 10.1016/j.surfcoat.2015.01.076

- ✓ J. Martin, P. Leone, **A. Nominé** , D. Veys-Renaux , G. Henrion, T. Belmonte
Influence of electrolyte ageing on the Plasma Electrolytic Oxidation of aluminium
Surface & Coatings Technology 269 (2015) 36-46 **(IF =3.192)**
<https://www.sciencedirect.com/science/article/pii/S025789721400989X>
doi: 10.1016/j.surfcoat.2014.11.001

- ✓ **A. Nominé**, J. Martin, C. Noël, G. Henrion, T. Belmonte, I.V. Bardin, V.L. Kovalev, A.G. Rakoch
The evidence of cathodic micro-discharges during plasma electrolytic oxidation process
Applied Physics Letters 104 (8) (2014) 081603 **(IF=3.521)**

<https://aip.scitation.org/doi/full/10.1063/1.4866425>
doi: 10.1063/1.4866425

- ✓ J. Martin, A. Melhem, I. Shchedrina, T. Duchanoy, **A. Nominé**, G. Henrion, T. Czerwicz, T. Belmonte
Effects of electrical parameters on plasma electrolytic oxidation of aluminium
Surface & Coatings Technology 221 (2013) 70-76 (**IF = 3.192**)
<https://www.sciencedirect.com/science/article/abs/pii/S0257897213001060>
doi: 10.1016/j.surfcoat.2013.01.029

- ✓ A. G. Rakoch, **A. Nominé**, A. A. Gladkova, V. L. Kovalev, I. V. Bardin
Effective Regime of Microarc Oxidation (MAO) on AZ 91 Magnesium Alloy
Russian Journal of Non Ferrous Metals, 54(1) (2013) 8–12 (**IF = 0.497**)
<https://link.springer.com/article/10.3103/S1067821213010161>
DOI: 10.3103/S1067821213010161

Invited talks & Awards

Awards

- ✓ Conference prize at “Science of the Future” conference (Nizhny Novgorod, Russia)

Invited talks in International conferences

- ✓ *Keynote lecture in 7th International Conference on Innovations in Thin Film Processing and Characterization, Nancy, Nov. 16th – 20th 2015*
- ✓ *43rd IOP Plasma Physics Group Spring Conference, Isle of Skye, June 22th – 26th 2016*
- ✓ *International Conference on Plasmas with Liquids (ICPL 17), Prague, March 5th – 9th 2017*
- ✓ *International Conference on Micropropulsion and CubeSats, Singapore, January 8th – 12th 2018*
- ✓ *5th Annual World Congress of Smart Materials-2019 (WCSM-2019), Rome, March 6th – 8th 2019*
- ✓ *XXXIV International Conference on Phenomena in Ionized Gases (ICPIG), Sapporo, July 14th -19th 2019*