Gabriel Freiman

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US Status: Permanent Resident
Nationality: French

EDUCATION:

Ph.D., Physics, Ecole Polytechnique (Palaiseau – France), 2006
Dissertation : *Self-assembly of high-k oxides onto silicon for microelectronic applications*
Advisor: Pr.Philippe Barboux (ENSCP engineering school)

M.S., Materials Science, Université Pierre et Marie Curie – Paris 6 (Paris - France), 2003
Dissertation : *Self-assembly of TiP oxides onto silicon*
Advisor: Pr. William Sacks & Pr.Philippe Barboux

M.E., Materials Science, Institut National des Sciences Appliquées (Lyon - France), 2002.
Advisor: Pr. Mustapha Lemiti.

EMPLOYMENT:

Occidental College - Physics and Computer Science departments (2016 – now)
Full-time Non-tenured track position (2019-2020) – **Current position**
Full-time Non-tenured track position (2017 – 2018)
Part-time Non-tenured track positions (2016-2017, 2018-2019)
Mentor of three undergraduate students and one high school student– Occidental College Undergraduate Summer Research Program (2017, 2018)

UCLA - Materials Science & Engineering Department (2016 – 2019)
Part-time Lecturer in the dept. of Materials Science at UCLA (Fall 2016, Spring 2017, Fall 2018, Fall 2019)

Family leave (main care provider : 2015 - 2016)

Research Engineer, Schlumberger France (2008 - 2014)
Post-Doctoral Researcher, Schlumberger, France (2006 - 2007)

Research Engineer, STMicroelectronics, France (2003 - 2006)

TEACHING EXPERIENCE:

Occidental College:
146-Statistics - Labs & Lectures (life-science majors &)
115-General Physics I-Mechanics (life-science majors) - Labs & Lectures
125-General Physics II-Electricity and Magnetism (life-science majors) - Labs & Lectures
110-Labs-Introduction to Mechanics (physics majors)
117-Labs-Waves & Thermal Physics (physics majors)
120-Labs-General Physics II (physics majors)
315/316-Advanced Labs (physics majors)

UCLA:
MSE105 - Principles of Nanoscience and Nanotechnology (undergraduate course) – Fall 2016, Fall 2018, Fall 2019.
MSE200 – Principles of Materials Science I: Solid State Physics (graduate course) – Fall 2019
MSE201 - Principles of Materials Science II: Solid State Phase Changes (graduate course) – Spring 2017

RESEARCH EXPERIENCE:

UCLA
Characterization of carbon and graphene nanostructures through Scanning Electron Microscopy and Raman (Dept. of Materials Science and Engineering). Contact: S.Pridokho.

Occidental College
In 2018, Occidental College research funding for two students, one through the Norris Summer Research Endowment and one through NSF funding called COSMOS* Research Program.
In 2017, Occidental College research funding for two students, one through the Undergraduate Research Program and one through NSF funding called COSMOS* Research Program.

*COSMOS: Creating Opportunities in Science and Mathematics for Occidental Students

Ecole Polytechnique (France)
Hydrophilic Polyethylene Glycol coating to improve downhole sensors measurement such as resistivity, optical, thermal, flow by enhancing water wettability of active surfaces (2010). Funding from Schlumberger.
Layer-by-layer deposition of high-k oxides for microelectronic applications (2003 – 2006). Funding from STMicroelectronics.
Contact: M.Plapp.

Commissariat à l'Energie Atomique - Diamond Laboratory (France)
Polycrystalline diamond coated metal-based sensors for oil & gas applications and method to manufacturing it
Collaboration between Schlumberger and CEA (Saclay - France). Contact: E.Scorsone & P.Bergonzo.

PUBLICATIONS:

Freiman, G., Gutierrez J., Oravec C., Effect of temperature on Photovoltaic conversion power efficiency of polysilicon solar cells, The Physics Teacher Journal **(To be submitted).**
Freiman G., Barboux P., Perrière J., Layer-by-layer deposition of Eu:LaPO4 films for luminescence applications, Thin Solid Films, (***Submitted)***
Korb J.-P., Freiman G., Nicot B., Ligneul P., Dynamical surface affinity of diphasic liquids as a probe of wettability of multimodal porous media, Physical Review E, 80, 061601-1 to 061601-12, (2009.)
Freiman G., Korb J.-P., Nicot B., Ligneul P., Microscopic wettability of carbonate rocks: a proton field cycling NMR approach. Diffusion Fundamentals, 25, 10, 25.1-25.3, (2009.)
Freiman G., Barboux P., Perriere J., Giannakopoulos K., Layer by layer deposition of zirconium oxide onto silicon Thin Solid Films, 517, 8, 2670-2674, (2008.)
Freiman G., Barboux P., Perriere J., Giannakopoulos K., Sequential grafting of dielectric phosphates onto silicon oxide, Chemistry of Materials, 19, 24, 5862-5867, (2007.)
Faucheux A., Freiman G., Barboux P., Chazalviel J.-N., Ozanam F., Perriere J., Dielectric layers through wet chemistry, Proceedings of SFV, Autrans SFV editions, 55, (2005.)

PATENTS:

Korb J.-P., Freiman G., Nicot B., Ligneul P., Determination of earth formation parameters from T1 NMR relaxation dispersion measurements. US patent US20110181277 A1, (2011.)
Berthet G., Freiman, G., Danaie K., Bergonzo P., E.Scorsone, Polycrystalline diamond coated metal-based sensors (2014). Internal Patent memo Schlumberger.

REFERENCES:

Scheel,J., Occidental College, Professor in Physics, jscheel@oxy.edu
Snowden-Ifft D., Occidental College, Chair of the Department of Physics, ifft@oxy.edu
Leonard K., Occidental College, Chair of the Department of Computer Science, leonardk@oxy.edu
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Dunn, B., UCLA, Chair Department of Materials Science and Engineering, bdunn@ucla.edu
Streit, D.C., UCLA, Professor, Department of Materials Science and Engineering, streit@ucla.edu
Kodambaka, S., UCLA, Associate Professor, Vice-chair of the Department of Materials Science and Engineering, Undergraduate Studies, kodambaka@ucla.edu

Barboux, P., ENSCP (Paris – France), Research Director. philippe-barboux@chimie-paristech.fr
Korb, J.-P., Ecole Polytechnique (Paris-France), Research Director, jean-pierre.korb@polytechnique.edu
Lemiti, M., INSA de Lyon (France), Research Director, mustapha.lemiti@insa-lyon.fr