

Jean-Christophe Gomez-Lavocat

Contact

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Objective A six month internship as research assistant

Home Address

Résidence Villa Helios (Bat C115)
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Educational Background

2006 – 2009 Ecole Centrale Marseille (Marseille, FRANCE)



– M.S. in Applied Physics (Degree expected Sept 2009)

One of France's leading science and engineering graduate schools, specialized in optics and chemistry.

Relevant courses : *Quantum mechanics, Quantum chemistry, Electronics, Fields Theory, Optics, Thermodynamics, Solid state*

2004 – 2006 Lycée Masséna (Nice, FRANCE)

– French prépa (MP)

Undergraduate program. Intensive preparation for the national competitive entrance exams to leading French engineering schools « Grandes Ecoles ».

Relevant courses : *mathematics, physics, algorithmic*

2001 - 2004 Lycée Porto-Vecchio (Porto-Vecchio, FRANCE)

– Scientific French Baccalaureate with distinction

US equivalent : high school diploma plus one year

Additional subjects : *cinema, windsurfing*

Professional Experience

2008



Laboratoire Fresnel (Marseille, FRANCE) – Optical research lab of french CNRS (national scientific research institute)

Eight weeks internship as research assistant with Dr Stefan Enoch (PhD.)
Development of an invisible cloak made of meta-materials.

2007 -2008 Ecole Centrale Marseille (Marseille, France) - Interdisciplinary Project

Designed a 3D-measurement system using phase-shifting profilometry.
Lead a team of five international students.

2007 - 2008 POPSUD (Marseille, FRANCE) – Non-Profit Organisation managing a European Competitive Photonics Cluster



Participated in the organization of a conference dealing with optical complex system (OCS2008).

Creator and Webmaster of <http://www.ocs2008.org>
Managed registration and call for papers.

2007

Corstyrene (Aleria, FRANCE) – Polystyrene manufacturer

Five week internship : production (three weeks) R&D labs (two weeks).
Designed a new hollow-core slab using CAD.
Examined the impact of heat on the slab.
Facilitated the work of the team by the use of new processes.

2006



Laboratoire Fresnel (Marseille, FRANCE) – Optical research lab of french CNRS (national scientific research institute)

Worked as research assistant with Dr Ludovic Escoubas (PhD.)
Conducted a simulation of organic photovoltaic cells.

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Languages

- **French** : Native Language
- **English** : Excellent command (TOEIC : 965, TOEFL iBT : 100)
- **German** : Good command
- **Spanish** : Good understanding and expression

Computer skills

- **Environments** : Linux (Debian, Mandrake), Windows (95, 98, 200 and XP)
- **Web** : Strong basis in webmastering (html, php, mysql) and network administration (apache, ftp, pop, imap, smtp, ...)
- **Publication** : Familiar with Open Office.org, good background in LaTeX
- **Software** : Solidworks, Matlab, Scilab, Maple, Labview, Rsoft suite
- **Programming** : C, CaML, Prolog, Php (*learn new languages easily*)

Additional information

- **Sports** : Windsurfing, Member of Ecole Centrale Marseille Sailing team
- **Volunter work** : Led a Corsican astronomy club twice weekly for three months and produced a [website](#) in 2004.
- **Associations (since 2006)** :
 - *Massilia Défi Voile* : Secretary of Ecole Centrale Marseille Sailing team
Contacted sponsors and organizations
 - *M.W.F.* : Founder of Ecole Centrale Marseille windsurfing club
Responsible for a group of 30 students and a 4,000€ budget
 - *Ginfo* : Member of Ecole Centrale Marseille computer science association
Helped students when they had a computer or internet problem
 - *E.W.B.* : Member of Engineers Without Borders -France
Organized events dealing with Africa and India
Prepared school information for children concerning climate change

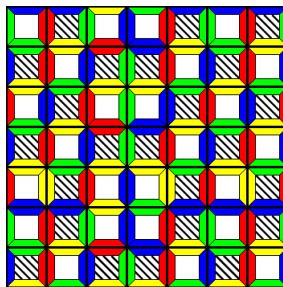
References

- **Stefan Enoch** : PhD Researcher at Fresnel Laboratory (CNRS)
stefan.enoch@fresnel.fr
- **Michel Lequime** : PhD Researcher at Fresnel Laboratory (CNRS)
michel.lequime@fresnel.fr
- **Katia Mirochnitchenko** : Network manager of Popsud
katia.mirochni@popsud.org
- **Mireille Commandre** : PhD Researcher at Fresnel Laboratory (CNRS)
mireille.commandre@fresnel.fr

Research Experiences (updated July 2008)

During my undergraduate studies I have been implied in four research projects. The first one took place when I was in A French “Classe Préparatoire”, two others took place last year (one within a French researcher laboratory and the second in a society), and the last project was part of my studies in Ecole Centrale Marseille.

My first involvement in research dealt with mathematics and algorithmic. Indeed, when I was young I made a mathematical article concerning 'Penrose tiling'. Since then I have been interested in the periodicity and aperiodicity problem. One of the major contribution have been made by Hao Wang. He showed that any Turing machine can be turn into a set of 'Wang tiles'. During my research I wrote software to compute every possible tilings given a set of Wang tiles and a square of size n .

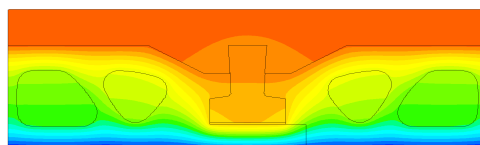


A quasiperiodic tiling using Wang tiles

This research lead to a written paper (available at : http://jcgomez-lavo.perso.ec-marseille.fr/doc/wang_tiles%20-%20tipe.pdf) and an oral presentation (slides are available at : http://jcgomez-lavo.perso.ec-marseille.fr/doc/wang_tiles%20-%20slides.pdf). These documents were written in French and using LaTeX.

My second approach of the research world was more concrete. I worked as a research assistant at 'Institut Fresnel', a French optics laboratory. I worked with Dr. Ludovic Escoubas on the impact of the electromagnetic field from the sun upon an organic photovoltaic cell. I was attracted by the work of Dr Escoubas and asked him to explain me his current research. He answered and offered me to work with him last year. No paper has been published yet because the whole study is not finished. I had to use a percolation algorithm and inject it into Rsoft – Fullwave.

My third experience took place last summer during an internship within the society 'Corstyrene'. This company produces manufactured goods made of expanded polystyrene. They wanted to shape a new product aimed at isolating houses. I conducted the research using software to stimulate the heat transfer.



Heat transfer through a polystyrene slab

Finally, I was involved in an interdisciplinary project in which I lead a team of Brazilians and French students. We had to implement some 3D-shape measurement methods with a webcam. I especially studied different phase-shifting methods. We used Matlab and our software will be used by Ecole Centrale Marseille for its students.

I am actually working in Institut Fresnel on another optical project. I have to implement an invisible cloak in the visible spectrum area, built with meta-materials. I have to use Comsol Multiphysics.