

Franck AMYOT
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Current Position (Since January 2002)

Research Fellow (visiting fellow between 2002-2007) at the *Laboratory of Integrative and Medical Biophysics*, NICHD

Research: Biomechanics of tumour induced angiogenesis.

projects: -Thin film of oriented collagen fibrils for cell motility studies
-*In vitro* study of capillary formation and growth
-Stochastic Modelling of Tumor-Induced Angiogenesis
-Experimental and theoretical study of cell aggregation

Experience

PhD student at the university Paris 7 between September 1988 and December 2001

PhD study : Theoretical and experimental analysis of the flows and mass transfer in a tri-dimensional driven cavity- Application to the study of the kinetics release of drug loaded on microbeads for embolisation

Works: -Theoretical study of recirculation flow with CFD software
-Creation of an experimental hydrodynamic bench
-Study of the mixing between two flows
-Creation of holographic bench in order to study the iso-concentration line in a vortex
-Creation and optimisation of a experimental device for study the kinetics release of drug loaded on microbeads for embolisation

Key words : CFD, mixing, velocimetry laser Doppler, mass transfer, recirculation flow recirculation, pharmacopoeia devices, optimization, holography, spectrophotometer.

Trainee during three months at Sopha medical vision (July 1997)

Study on spatial resolution of gamma camera

Education

2001-PhD: Pharmacology and Physical-chemistry. (Jury felicitation)

1998-DEA in Biomechanics, university de Paris-VII (PhD coursework equivalent)
Fluids mechanic, rheology, numerical modelling and simulation, measure techniques and instrumentation, acquisition and data analysing

1997-Maîtrise de Physique (Master of science Degree equivalent), university Paris-VII
Course content: fluid mechanics, statistical physics, soft mater, mathematics...

1996-Licence de Physique, (Bachelor of Science Degree equivalent), university Paris-VII
option macroscopic physics

Training experiences in research

Past-bac student (2004/2005), **LIMB-NIH** Stochastique modelling of tumor induced angiogenesis

DEA biomechanics student (6 month, 2001), LBHP Theoretical and experimental studies of the loading of drug on microbeads for embolisation

Training of four summer students between 2002 and 2006

Teaching experiences

Fluid mechanics at the IUT of the university Paris-VII

Thermodynamics at the IUT of the university Paris-VII (TP)

Scientific programming at the university of Paris-VII (Mathematica)

Main publications

F. Amyot, V. Boudy, K. Jurski, J.-C. Chaumeil, G. Guiffant, J. Dufaux.
A new device for release kinetic measurements of loaded microbeads designed for embolisation., *Innovation Technologique BioMedicale* (N°23, 285-289, 2002)

F. Amyot, K. Jurski, G. Guiffant, J. Dufaux.
Experimental and theoretical study of mass transfer from loaded microbead designed for embolisation: optimization possibility. *International Communication of Heat and Mass Transfer* (29, N°5, 623-632, 2002).

F. Amyot, K. Camphausen, A. Siavosh, D. Sackett, A. Gandbakhche
Quantative method to study the network formation of endothelial cells in response to tumor angiogenic factors. *IEE proc-Syst. Biol.* (Vol. 152, N°2, 2005).

F. Amyot, A. Small, H. Boukari, K. Camphausen, Amir Gandjbakhche.
Stochastic Model of Angiogenesis and Endothelial Cell Apoptosis in a Heterogeneous Extracellular matrix. *Macrovascular research* (accepted)

Franck Amyot, Alex Small, Hacène Boukari, Dan Sackett, John Elliott, Dennis McDaniel, Anne Plant and Amir Gandjbakhche.
Thin films of Oriented collagen fibrils for cell motility studies. *Journal of Biomedical materials research PartB: Applied Biomaterials (in press)*

Alexander R. Small, Adrian Neagu, Franck Amyot, Dan Sackett, Victor Chernomordik, Amir Gandjbakhche.
Spatial Distribution of VEGF Isoforms and Chemotactic Signals in the Vicinity of a Tumor. *Manuscript under revision for Journal of Theoretical Biology*

Skills

Computational fluid dynamic:

- *CFD software* : Fidap (used during 3 years for my thesis), Femlab (used during one year at the NIH)
- *Meshing software* : Gambit, Femlab
- *Graphic Visualisation*: Ensight, Fidap

Scientific software: Matlab, Mathematica (3 years of teaching), visual C++, Labview

Programming: C++, Fortran, Turbo Pascal, Visual Basic

Main experimental techniques: Velocimetry laser Doppler, holography, spectrophotometry, confocal microscopy, cells culture cellulaire, FCS, fluorescence

Language: Fluent English (work and live in USA since 01/2002)
Spanish : basic knowledge