

## Prof. Patrick SIARRY, Ph.D.



Prof. Patrick Siarry was born on May 28, 1952, in Pertuis. His research area is relatively (since 1982) new “metaheuristic” optimization such as simulated annealing, which are indicated for the so-called problems of “hard optimization” because of their ability to avoid in principle, trapping in sub-optimal solutions. This topic is multidisciplinary in nature, both by the source of the methods studied (physics, biology, ethology). Much of his work is explicitly one or the other keywords – in particular, modeling, identification, learning rule bases (artificial intelligence), control, nondestructive testing and maintaining the biological and medical engineering.

### Education and qualifications

- 1970 Bachelor C, with honors
- 1972 Graduate Mathematics and Special B (physics)
- 1972 Admission on contest at INPG, Ecole Nationale Supérieure d'Electrical Engineers of Grenoble (IEG), Section Engineering Physics
- 1973 Certificates C1 and C2 of physics research (Univ. des Sciences de Grenoble)
- 1975 Engineer, Institut National Polytechnique de Grenoble (INPG), with honors
- 1975 “First Certificate in English”, University of Cambridge
- 1975 Listing on securities in the second year of SUPELEC (Ecole Supérieure d'Electricite), Paris
- 1977 Engineer, Ecole Supérieure d'Electricité (SUPELEC), Section Automatics
- 1986 Ph.D. from the University of Paris 6, specialty electronics, high honors  
Topic: Simulated annealing method: application to the design of electronic circuits
- 1994 Habilitation to supervise research from the University of Paris 11, Orsay
- 1995 Professor, Section 61 of C.N.U.
- 1999 Professor at University Paris-Est Créteil (UPEC)
- 2010 Professor Grade: Exceptional class (class C.N.U.)

### Professional experience

- March 1978 – August 1982 Research engineer at EDF, Directorate of Studies and Research, Laboratory of Chatou, Department Optimization and process automation, optimization and simulation division
- September 1982 – December 1988 Assistant at the School of Industrial Physics and Chemistry of the City of Paris (ESPCI), Laboratory of Electronics

January 1989 – August 1995	Lecturer at the Ecole Centrale Paris (ECP), Laboratory of Electronics and Applied Physics. Position in section 61 of C.N.U.
September 1995 – August 1999	Professor at the IUT Cergy-Pontoise, Laboratory of Modeling and Optimization in Electronic Systems. Position in section 61.
since January 2009	Director of Team Image Processing and Signal (TIS) at the Laboratory of Images, Signals and Intelligent Systems. The research topics of TIS are analysis of nonstationary signals, methods of segmentation and registration imaging, optimization, data compression, modeling and control of complex systems approaches within the Artificial Intelligence.

### **Participation in committees and scientific councils:**

- An Assistant director of the graduate school Mathematics and ICT (MSTIC) PRES Université Paris-Est, from 1 January 2010 (PRES Université Paris-Est combines several institutions: the University Paris-Est, Créteil, University Paris-Est Marne-la-Vallée, Ecole des Ponts, ESIEE, etc.)
- A Member of the Commission of the Doctoral Thesis of Science and Engineering: Materials, Modeling, Environment (SIMM) Paris 12 (2004-2009)
- A Chairman of the Commission of Experts (CSE) of Sections 60-61-63 Paris 12 (2 terms: March 2001 - February 2007)
- A Member of the “office” of the Scientific Council of the University of Cergy-Pontoise (group of 10 professors) (1996-1999)

### **Participation in juries**

- 6 habilitation juries, including 2 as a reporter;
- 63 juries of doctoral theses, including 41 as a reporter;
- 16 juries internship DEA;
- 2 internship juries “control” of the Ecole Polytechnique de Montreal;
- 3 juries memory engineer CNAM;
- 10 juries for engineering diploma thesis.

### **International recognition**

- An appointed member of the:
  - Technical Committee on Soft Computing at the IEEE Systems;
  - Technical Committee on Soft Computing at the Man and Cybernetics Society (SMC);
  - Technical Committee on Optimal Control (TC 2.4) of IFAC (since 2005).
- A “Senior Member” of IEEE (since 1995).
- Participation in the program committees of more than 60 congresses.
- Sessions organization in 15 congresses for the period 2002-2009.

- A guest editor at the:
  - European Journal of Operational Research, Special Issue “Adaptation of Discrete Metaheuristics to Continuous Optimization”;
  - Journal RAIRO Operations Research, Special Issue “Cooperative Methods for Multiobjective Optimization”;
  - Int. J. of Computational Intelligence Research, Special Issue “Particle Swarm Optimization”;
  - European Journal of Operational Research, special issue (following the conference INCOM'06) “Metaheuristics in Transportation and Logistics”, etc.

### Teaching experience in training

Since February 1979 Prof. Siarry has taught covering five disciplines:

- *Automatics*: linear and continuous servo systems, servo systems and sampled linear, nonlinear feedback systems, state space representation, optimal control, CAD Automatic, etc.
- *Theory and Signal Processing*
- *Electronics*: analog circuits, combinatorial and sequential logic, introduction to microprocessors, CAD electronic circuits (analog and logic simulation), etc.
- *Operational Research*: random phenomena, linear programming, optimization, etc.
- *Computers*: Programming in FORTRAN, numerical analysis, applied statistics, etc.

Prof. Siarry has created several continuing education courses at ECP, and an internship at ENSTA. He also served in two courses of further education institutions: the Centre for Training EDF (Les Mureaux) and CNAM (Paris).

Prof. Siarry has published an educational book:

Siarry P., Automatic baseline, 224 pages, Ellipses, 1989.

### Research directions

Prof. Siarry has 12 frames at 100% of doctoral theses, including 1 in progress; 9 frames at 50% of doctoral theses, including 6 ongoing; 6 joint supervision of doctoral theses, including 5 courses; 4 frames partial (< 30%) of doctoral theses; 2 research post-doctoral; 18 internships DEA or Master 2 research; 2 stages of “ownership” of the Ecole Polytechnique de Montreal; 2 memories Engineer CNAM; 1 team of industrial research project (two engineers and one technician); 10 training engineering degree or master’s and 2 stages of BTS or DUT.



## **Publications**

Prof. P. Siarry scientific career, for 32 years, resulting in various publications: 80 articles in international peer-reviewed journals and 16 items of national peer-reviewed journals; 6 international and 9 national books; 20 chapters of international and 7 chapters of national books, more than 150 articles in conference proceedings; 21 seminars, 18 internal reports, 8 records for internal data centers.

The scientific and research activities of Prof. P. Siarry confirm him as a leading scientist in the area of “metaheuristic” optimization.

Let wish him health and creative power for new achievements.

**Editorial board of *Int. J. Bioautomation***