

## CURRICULUM VITAE

### **DREYFUS Gérard**

Né le 10 mai 1948.

Français



### **Adresse professionnelle**

E.S.P.C.I – ParisTech, laboratoire SIGnaux, Modèles, Apprentissage statistique (SIGMA)

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### **Diplômes**

Ingénieur ESPCI (1971)

Docteur ès Sciences, Université Pierre et Marie Curie, Paris (1976).

### **Fonctions**

Boursier, Centre National de la Recherche Scientifique : 1971-1974.

Maître de Conférences en Informatique : 1974 - 19782.

Professeur, directeur du Laboratoire d'Électronique de l'ESPCI – ParisTech depuis 1982.

Directeur adjoint de l'UMR 7084 du CNRS.

Member of the steering committee of the CEMIP (Center for Microelectronics of Paris).

### **Enseignement**

Electronique, ESPCI-ParisTech.

Commande de processus, ESPCI-ParisTech.

Apprentissage statistique, ESPCI-ParisTech.

Apprentissage statistique, École des Mines de Nantes.

Apprentissage statistique, Master TRIED, Université de Versailles.

### **Distinctions**

Coupe de l'Innovation du Président de la République (1978).

### **Création d'entreprises**

Co-fondateur de "L'Electret Français" (1973).

Co-fondateur et conseiller scientifique de NETRAL S.A. (1994).

### **Activités d'animation scientifique**

Membre du Comité de Direction du CEMIP (Centre de Microélectronique de Paris-Île de France).

Senior member de l'IEEE.

Membre de la European Neural Network Society.

Membre de la Société des Neurosciences.  
Membre de l'Association Française pour l'Intelligence Artificielle.

Fondateur du chapitre France de la Computational Intelligence Society de l'IEEE (2003).  
Président du chapitre France de la Computational Intelligence Society de l'IEEE (2003 – 2007).

Advisory Member du comité technique « Machine Learning for Signal Processing » de la Signal Processing Society de l'IEEE.  
Membre du comité technique « Neural Networks » de la Computational Intelligence Society de l'IEEE.  
Membre du comité technique « Multimedia Tutorials » de la Computational Intelligence Society de l'IEEE.  
Membre du comité technique « Machine Learning for Signal Processing » de la Signal Processing Society de l'IEEE (2004 – 2005).

### **Édition de journaux, organisation de conférences**

#### *Journaux :*

Action Editor de Neural Computation (MIT Press).  
Membre du comité éditorial de Theoretical Computer Science – Theory of Natural Computing (Elsevier).  
Membre du comité éditorial de Applied Intelligence (Springer).  
Membre du comité éditorial de Neurocomputing (Elsevier): 1990 – 2008.  
Membre du comité éditorial de Connection Science (Taylor & Francis): 1990 – 2000.  
Éditeur associé de IEEE Transactions on Neural Networks (1991 – 1992).

#### *Conférences scientifiques :*

Président de la première conférence européenne sur les Réseaux de Neurones *nEuro'88*.

Président du comité scientifique de ICANN'95.

Membre du comité d'organisation du “Learning” Workshop, anciennement “Neural Networks for Computing” Workshop (1988 – 2008).

Membre du comité de programme du Symposium International « Computational Intelligence In Robotics And Automation » de l'IEEE (1997).

Membre du comité de programme de ICANN'2002.

Membre du comité de programme du workshop IEEE « Neural Networks for Signal Processing », 2003.

Membre du comité de programme du workshop IEEE « Machine Learning for Signal Processing », 2005.

Membre du comité de programme du workshop IEEE « Machine Learning for Signal Processing », 2006.

Membre du comité scientifique de IWINAC'2007.

Membre du comité de programme du workshop IEEE « Machine Learning for Signal Processing », 2008.

Membre du comité de programme de la conférence internationale « International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems » (2006 – 2011).

Membre du comité de programme de IJCNN (International Joint Conference on Neural Networks) (2004 – 2009).

Membre du comité de programme de la conférence « Unconventional Computation » (2006 – 2008).

Membre du comité de programme de ICANN'2009.

Membre du comité de programme de ICANN'2010 (International Conference on Artificial Neural Networks).

## Direction de thèses de doctorat

- Étude de dispositifs piézoélectriques à électrets, N. MOANDA (1976).
- Étude de la pyroélectricité induite par injection de charges dans les polymères, J.J. CROSNIER (1977).
- Étude des phénomènes de polarisation électrique dans le polyéthylène, G. JOURNEAU (1977).
- Étude par résonance paramagnétique électronique de polymères chargés, M. LEGRAND (1978).
- Mise au point d'une méthode de détermination des potentiels dans un isolant, D. DARMON (1980).
- Étude des processus de dépolarisation d'un électret de polymère par action d'un solvant, M. FALCK (1980).
- Conception et réalisation d'un dispositif de test et d'émulation de systèmes numériques à microprocesseurs, P. ROUSSEL-RAGOT (1985).
- Étude de réseaux de neurones formels : conception, propriétés et applications, L. PERSONNAZ (1986)
- La méthode du recuit simulé : application à la conception de circuits électroniques, P. SIARRY (1986).
- Étude et réalisation d'un prototype de capteur d'accélération intégré sur silicium, X. PIROT (1987),
- Étude et réalisation d'un dispositif de reconnaissance de chiffres manuscrits, J.C. RONNET (1987).
- Réseaux de neurones pour la reconnaissance de formes : architectures et apprentissage, I. GUYON (1988).
- Recuit simulé et implantation de circuits électroniques : application à la microélectronique hybride, B. OULDALI (1989).
- La méthode du recuit simulé : accélération et parallélisation, P. ROUSSEL-RAGOT (1990).
- Réseaux de neurones formels : étude d'un simulateur à architecture parallèle et conception d'un circuit integer, A. JOHANNET (1990).
- Une méthode nouvelle de création automatique de réseaux de neurones pour la classification de données : application à la reconnaissance de chiffres manuscrits, S. KNERR (1991).
- Architectures et apprentissage de réseaux de neurones pour la classification et pour la prédiction de séries chronologiques I. POUJAUD (1991).
- Réseaux de neurones pour le filtrage adaptatif, l'identification et la commande de processus, O. NERRAND (1992).
- Étude de la parallélisation de l'apprentissage des réseaux de neurones, A. PETROWSKI (1992).
- Parallélisation de l'algorithme de recuit simulé : implantation et analyse de plusieurs algorithmes, N. KOUCEM (1992).
- Estimation d'une régression linéaire par réseaux de neurones ; application à un problème de robotique mobile, G. EUVRARD (1993).
- Formal Neural Networks and Olfaction : Modeling Pheromone Discrimination in Insects, C. LINSTER (1993).
- Conception et réalisation d'un réseau de neurones intégré en technologie CMOS pour la reconnaissance automatique de chiffres manuscrits, P.Y. ALLA (1994).
- Modélisation et commande de processus par réseaux de neurones : application au pilotage d'un véhicule autonome, I. RIVALS (1995).
- Méthodes statistiques de sélection d'architectures neuronales, D. URBANI (1995).
- Classification probabiliste par réseaux de neurones ; application à la reconnaissance de l'écriture manuscrite, D. PRICE (1996).
- Méthodes statistiques de sélection de modèles neuronaux ; applications financières et bancaires, H. STOPPIGLIA (1997).
- Réseaux d'ondelettes et réseaux de neurones pour la modélisation statique et dynamique de processus, Y. OUSSAR (1998).
- Sélection de modèles non-linéaires par leave-one-out ; étude théorique et application des réseaux de neurones au procédé de soudage par points, G. MONARI (1999).

- Réseaux de neurones pour le traitement automatique du langage : conception et réalisation de filtres d'information, M. STRICKER (2000).
- Nouvelles méthodes d'apprentissage pour la détection précoce d'anomalies cardiaques en électrocardiographie, R. DUBOIS (2004).
- Modélisation en bosses pour l'analyse des motifs oscillatoires reproductibles dans l'activité de populations neuronales : applications à l'apprentissage olfactif chez l'animal et à la détection précoce de la maladie d'Alzheimer, F. VIALATTE (2005).
- Modélisation dynamique par réseaux de neurones et machines à vecteurs supports : contribution à la maîtrise des émissions polluantes de véhicules automobiles, M. LUCÉA (2006).
- Conception et mise en œuvre de nouvelles méthodes d'élaboration de plans d'expériences pour l'apprentissage de modèles non linéaires, S. GAZUT (2007).
- Une nouvelle méthode d'apprentissage de données structurées : applications à l'aide à la découverte de médicaments, A. GOULON-SIGWALT (2008).
- Application de l'apprentissage artificiel à la prévision des crues éclairs, M. TOUKOUROU (2009).

## **PUBLICATIONS**

### ***LIVRES***

Apprentissage statistique

G. Dreyfus, J.M. Martinez, M. Samuelides, M. B. Gordon, F. Badran, S. Thiria, L. Hérault (Eyrolles, 2008).

Neural Networks

G. Dreyfus (Springer, 2005)

Les réseaux de neurones: méthodologie et applications.

G. Dreyfus, J.M. Martinez, M. Samuelides, M. B. Gordon, F. Badran, S. Thiria, L. Hérault (Eyrolles, 2002, reprinted 2004).

Les Réseaux de Neurones.

G. Dreyfus, coordonnateur (Masson, 1991).

La Méthode du Recuit Simulé.

P. Siarry, G. Dreyfus (IDSET, Paris, 1989).

Neural Networks from Models to Applications.

L. Personnaz, G. Dreyfus, eds. (IDSET, Paris, 1989).

### ***ARTICLES DANS DES JOURNAUX INTERNATIONAUX***

Electric fields and currents due to excess charges and dipoles in insulators,

G. Dreyfus, J. Lewiner,  
Physical Review B 8, 3032 – 3036 (1973).

Piezoelectricity induced by charge injection in thin polymer films,

G. Dreyfus, J. Lewiner,  
Journal of the Electrochemical Society 120, 1083 – 1086 (1973).

A zero-current electrometer method and its application to charge-decay measurements,

G. Dreyfus, J. Lewiner,  
Journal of Applied Physics 45, 721 – 726 (1974).

Electric fields and currents due to excess charges and dipoles in insulators - a comment,

B. Gross, G. Leal Ferreira, L. Nunes de Oliveira, G. Dreyfus, J. Lewiner,  
Physical Review B 9, 5318 – 5319 (1974).

Evidence of mechanical instabilities of electrets in electric fields,

G. Dreyfus, J. Lewiner,  
Journal of Applied Physics 10, 4357 – 4360 (1975).

Energie libre d'un diélectrique : contribution des charges électriques piégées,

G. Dreyfus, J. Lewiner,  
C. R. de l'Académie des Sciences de Paris 280, 341 – 344 (1975).

- Dispositif de mesure des potentiels de surface,  
S. Sakalauskas, G. Dreyfus, J. Lewiner,  
Journal of Physics E 8, 837 – 839 (1975).
- Free energy of electrets,  
G. Dreyfus, J. Lewiner,  
Physical Review B 14, 5451 – 5457 (1976).
- Pyroelectricity induced by charge injection in polymer electrets,  
J.J. Crosnier, F. Micheron, G. Dreyfus, J. Lewiner,  
Journal of Applied Physics 47, 4798 – 4799 (1976).
- Une méthode nouvelle de détermination de la distribution spatiale des potentiels dans les diélectriques,  
P. Laurenceau, J. Ball, G. Dreyfus, J. Lewiner,  
C. R. Académie des Sciences de Paris 283, 135 - 138 (1976).
- First E.S.R. observation of injected electrons trapped in electrets,  
M. Legrand, G. Dreyfus, J. Lewiner,  
Journal de Physique Lettres 38, L439 – L440 (1977).
- Les dispositifs de commutation à électrets,  
D. Périno, J. Lewiner, G. Dreyfus,  
L'Onde Electrique 57, 688 – 693 (1977).
- New principle for the determination of potential distributions in dielectrics,  
P. Laurenceau, G. Dreyfus, J. Lewiner,  
Physical Review Letters 38, 46 – 49 (1977).
- Localisation directe de la charge d'espace dans un diélectrique : méthode de l'onde de choc de pression,  
J. Lewiner, D. Darmon, G. Dreyfus, P. Laurenceau,  
Revue Générale de l'Electricité 87, 975 - 980 (1978).
- Méthode des courants thermostimulés,  
G. Dreyfus, C. Lacabanne, A. Rahal,  
Revue Générale de l'Electricité 87, 870 - 878 (1978).
- A new principle for radiation dosimetry and control,  
D. Périno, J. Lewiner, G. Dreyfus,  
IEEE Transactions on Nuclear Science 25, 1117 – 1720 (1978).
- Electron-spin resonance study of electron-bombarded polymer electrets I - Radical formation, piezoelectric and pyroelectric effects,  
G. Dreyfus, J. Lewiner, M. Legrand,  
Physical Review B 20, 1720 – 1724 (1979).
- Electron-spin resonance study of electron-bombarded polymer electrets II - Investigation of the trapped charges,  
M. Legrand, G. Dreyfus, J. Lewiner,  
Physical Review B 20, 1725 – 1732 (1979).
- Une méthode non destructive de mesure des distributions de charges dans les isolants,  
D. Darmon, P. Laurenceau, G. Dreyfus, J. Lewiner,  
Journal of Electrostatics 8, 75 – 79 (1979).

- Vapor-induced depolarization currents in electrets,  
B. Cantaloube, G. Dreyfus, J. Lewiner,  
Journal of Polymer Science 17, 95 – 101 (1979).
- Stress-wave probing of electric field distributions in dielectrics,  
C. Alquié, G. Dreyfus, J. Lewiner,  
Physical Review Letters 47, 1483 – 1487 (1981).
- Vapor-induced depolarization currents. I - Models,  
M. Falck, G. Dreyfus,  
J. Lewiner, Physical Review B 25, 5499 – 5508 (1982).
- Vapor-induced depolarization currents. II - Application,  
M. Falck, G. Dreyfus, J. Lewiner,  
Physical Review B 25, 5509 – 5514 (1982).
- Analysis of laser-induced acoustic pulse probing of charge distribution in dielectrics,  
C. Alquié, J. Lewiner, G. Dreyfus,  
Journal de Physique Lettres 44, L171 – L178 (1984).
- An Application of Physical Methods to the Computer-Aided Design of Electronic Circuits,  
P. Siarry, G. Dreyfus,  
Journal de Physique Lettres 45, L 39 – L 48 (1984).
- Information Storage and Retrieval in Spin Glass Like Neural Networks,  
L. Personnaz, I. Guyon, G. Dreyfus,  
Journal de Physique Lettres 46, L 359 – L 365 (1985).
- New non-destructive method for the investigation of insulator-semiconductor structures,  
G. Bouillier, C. Alquié, G. Dreyfus,  
Applied Physics Letters 47, 506 – 507 (1986).
- A Biologically Constrained Learning Mechanism in Networks of Formal Neurons,  
L. Personnaz, I. Guyon, G. Dreyfus et G. Toulouse,  
Journal of Statistical Physics 43, 411 – 422 (1986).
- Collective Computational Properties of Neural Networks: New Learning Mechanisms,  
L. Personnaz, I. Guyon et G. Dreyfus,  
Physical Review A 34, 4217 – 4228 (1986).
- Thermodynamic Optimization of Block Placement,  
P. Siarry, L. Bergonzi, G. Dreyfus,  
IEEE Transactions on Computer-Aided Design 6, 211 – 221 (1987).
- High-Order Neural Networks: Information Storage Without Errors,  
L. Personnaz, I. Guyon, G. Dreyfus,  
Europhysics Letters 4, 863 – 867 (1987).
- Storage and Retrieval of Complex Sequences in Neural Networks,  
I. Guyon, L. Personnaz, J.P. Nadal, G. Dreyfus,  
Physical Review A. 38, 6365 – 6372 (1988).

- Placement and Channel Routing by Simulated Annealing: Some Recent Developments,  
P. Chaisemartin, G. Dreyfus, M. Fontet, E. Kouka, P. Loubières, P. Siarry,  
Computer Systems, Science and Engineering, 4, 35 – 48 (1989).
- A cursory Introduction to the Physicists' Neural Networks,  
L. Personnaz, E. Bienenstock, G. Dreyfus,  
Journal de Physique Colloque C3, 207 – 208 (1989).
- A Problem-Independent Parallel Implementation of Simulated Annealing: Models and Experiments,  
P. Roussel-Ragot, G. Dreyfus,  
IEEE Transactions on Computer-Aided Design 9, 827 – 835 (1990).
- Specification and Implementation of a Digital Hopfield-type Neural Network with On-chip Training,  
A. Johannet, L. Personnaz, G. Dreyfus, J.D. Gascuel, M. Weinfeld,  
IEEE Transactions on Neural Networks, 3, 529 – 539 (1992).
- A Unified Framework for Gradient Algorithms Used for Filter Adaptation and Neural Network Training,  
S. Marcos, O. Macchi, C. Vignat, G. Dreyfus, L. Personnaz, P. Roussel-Ragot,  
International Journal of Circuit Theory and Applications 20, 159 – 200 (1992).
- Handwritten Digit Recognition by Neural Networks with Single-layer Training,  
S. Knerr, L. Personnaz, G. Dreyfus,  
IEEE Transactions on Neural Networks 3, 962 – 968 (1992).
- Réseaux de Neurones pour le Filtrage Non-linéaire Adaptatif,  
S. Marcos, P. Roussel-Ragot, L. Personnaz, O. Nerrand, G. Dreyfus, C. Vignat,  
Traitement du Signal, 8, 409-422 (1993).
- Computational Diversity in a Formal Model of the Insect Olfactory Macroglomerulus,  
C. Linster, C. Masson, M. Kerszberg, L. Personnaz, G. Dreyfus,  
Neural Computation 5, 239-252 (1993).
- Performance Analysis of a Pipelined Backpropagation Parallel Algorithm,  
A. Petrowski, G. Dreyfus, C. Girault,  
IEEE Transactions on Neural Networks 4, 972-977 (1993).
- Neural Networks and Non-linear Adaptive Filtering: Unifying Concepts and New Algorithms,  
O. Nerrand, P. Roussel-Ragot, L. Personnaz, G. Dreyfus, S. Marcos,  
Neural Computation 5, 165-197 (1993).
- Training Recurrent Neural Networks: Why and How? An Illustration in Process Modeling,  
O. Nerrand, D. Urbani, P. Roussel-Ragot, L. Personnaz, G. Dreyfus,  
IEEE Transactions on Neural Networks 5, 178-184 (1994).
- A Model for Pheromone Discrimination in the Insect Antennal Lobe: Investigation of the Role of Neuronal Response  
Pattern Complexity,  
C. Linster, G. Dreyfus,  
Chemical Senses, 21, 19-27 (1996).
- The Canonical Form of Discrete-Time Nonlinear Models,  
G. Dreyfus, Y. Idan,  
Neural Computation, 10, 133-164 (1998).

Towards a Principled Methodology for Neural Network Design and Performance Evaluation in QSAR; Application to the Prediction of LogP

A. Duprat, T. Huynh, G. Dreyfus,  
J. Chem. Inf. Comp. Sci., 38, 586-594 (1998).

Training Wavelet Networks for Nonlinear Dynamic Input-Output Modeling,

Y. Oussar, I. Rivals, L. Personnaz, G. Dreyfus,  
Neurocomputing, 20, 325-331 (1998).

Initialization by Selection for Wavelet Network Training,

Y. Oussar, G. Dreyfus,  
Neurocomputing, 34, 141-143 (1998).

Comment on "Discrete-time Recurrent Neural Network Architectures: a Unifying Review",

L. Personnaz, G. Dreyfus,  
Neurocomputing, 20, 325-331 (1998).

Training Wavelet Networks for Nonlinear Dynamic Input-Output Modeling,

Y. Oussar, I. Rivals, L. Personnaz, G. Dreyfus,  
Neurocomputing, 20, 173-188 (1998).

Comment on "Recurrent Neural Networks: a Constructive Algorithm, and its Properties",

L. Personnaz, G. Dreyfus,  
Neurocomputing, 20, 321-324 (1998).

Withdrawing an Example from the Training Set: an Analytic Estimation of its Effect on a Non-linear Parameterised Model,

G. Monari, G. Dreyfus,  
Neurocomputing, 35, 195-201 (2000).

Initialization by Selection for Wavelet Network Training,

Y. Oussar, G. Dreyfus,  
Neurocomputing, 34, 131-143 (2000).

How to be a Gray Box: Dynamic Semi-physical Modeling,

Y. Oussar, G. Dreyfus,  
Neural Networks, 14, 1161-1172 (2001).

Temporal Coding in an Olfactory Oscillatory Model,

B. Quenet, D. Horn, G. Dreyfus, R. Dubois,  
Neurocomputing, 38-40, 831-836 (2001).

Local Overfitting Control via Leverages,

G. Monari, G. Dreyfus,  
Neural Computation, 14, 1481-1506 (2002).

Modeling spatiotemporal olfactory data in two steps: from binary to Hodgkin-Huxley neurons,

B. Quenet, S. Sirapian, R. Dubois, G. Dreyfus, D. Horn,  
Biosystems, 67, 203-211 (2002).

A Machine-learning Approach to the Estimation of the Liquidus Temperature of Glass-forming Oxide Blends,  
C. Dreyfus, G. Dreyfus,  
Journal of Non-Crystalline Solids, 318, 63-78 (2003).

Ranking a Random Feature for Variable and Feature Selection,  
H. Stoppiglia, G. Dreyfus, R. Dubois, Y. Oussar,  
Journal of Machine Learning Research, 1399-1414 (2003).

Reply to the comments on « Local Overfitting Control via Leverages »  
Y. Oussar, G. Monari, G. Dreyfus  
Neural Computation, 16, 419-443 (2004).

B. Quenet, G. Horcholle-Bossavit, A. Wohrer, G. Dreyfus  
Formal modeling with multistate neurons and multidimensional synapses  
Biosystems, 79, 21-32 (2005).

A. Goulon-Sigwalt-Abram, A. Duprat, G. Dreyfus  
From Hopfield nets to recursive networks to graph machines: numerical machine learning for structured data  
Theoretical Computer Science, 344, 298-334 (2005).

R. Dubois, B. Quenet, Y. Faisandier, G. Dreyfus  
Building meaningful representations for nonlinear modeling of 1D- and 2D-signals: applications to biomedical signals  
Neurocomputing, 69, 2180 – 2192 (2006)

F. Vialatte, C. Martin, R. Dubois, B. Quenet, R. Gervais, and G. Dreyfus  
A machine learning approach to the analysis of time-frequency maps, and its application to neural dynamics  
Neural Networks, 20, 194 - 209 (2007).

A. Goulon, T. Picot, A. Duprat, and G. Dreyfus  
Predicting activities without computing descriptors: graph machines for QSAR  
SAR and QSAR in Environmental Research, 18, 141 - 153 (2007)

R. Dubois, P. Maison-Blanche, B. Quenet, G. Dreyfus  
Automatic ECG wave extraction in long-term recordings using Gaussian mesa function models and nonlinear probability estimators  
Computer Methods and Programs in Biomedicine, 88, 217-233 (2007)

C. Faur, A. Cougnaud, G. Dreyfus and P. Le Cloirec  
Modelling the breakthrough of activated carbon filters by pesticides in surface waters with static and recurrent neural networks  
Chemical Engineering Journal, 145, 7–15 (2008).

S. Gazut, J. M. Martinez, G. Dreyfus, Y. Oussar  
Towards The Optimal Design of Numerical Experiments  
IEEE Trans. on Neural Networks, 19, 874 - 882 (2008).

A. Magon de la Villehuchet, M. Brack, G. Dreyfus, Y. Oussar, D. Bonnefont-Rousselot, M.J. Chapman, A. Kontush  
A machine learning approach to the prediction of oxidative stress in chronic inflammatory disease  
Redox Reports, 14, 23-33 (2009).

F. Extramiana, R. Dubois, M. Vaglio, P. Roussel, G. Dreyfus, F. Badilini, A. Leenhardt, P. Maison-Blanche  
The time course of new T-wave ECG descriptors following single and double dose administration of Sotalol in healthy subjects  
Annals of Noninvasive Electrocardiology, vol. 15, pp. 26 - 35 (2010).

T. Hueber, E. Benaroya, G. Chollet, B. Denby, G. Dreyfus, M. Stone  
Development of a silent speech interface driven by ultrasound and optical images of the tongue and lips  
Speech Communication, vol. 52, pp. 288 - 300 (2010).

M. Toukourou, A. Johannet, G. Dreyfus, P. A. Ayrat  
Rainfall-runoff modeling of flash floods in the absence of rainfall forecasts: the case of "Cévenol flash floods"  
Applied Intelligence, in press.

B. Denby, Y. Oussar, I. Ahriz, G. Dreyfus,  
High-Performance Indoor Localization with Full-Band GSM Fingerprints  
International Journal of Navigation and Observation, in press.

### ***CONFÉRENCES INTERNATIONALES, CHAPITRES DE LIVRES***

Evidence of Piezoelectricity in Thin Film Electrets,  
G. Dreyfus, J. Lewiner,  
2nd International Conference on Electrets, Charge Storage and Transport Phenomena in Dielectrics (Miami, 1972).

Charge and Current Measurements in High Resistivity Materials,  
G. Dreyfus, J. Lewiner,  
International Conference on High-Resistivity Semiconductors, Electrophotography and Photoelectrets (Varna, 1973).

Une nouvelle famille de matériaux utilisables pour les dispositifs électromécaniques,  
G. Dreyfus, J. Lewiner,  
Colloque International sur les matériaux pour les composants électroniques (Paris, 1975).

Thermodynamical Parameters of Electrets Derived from Free Energy Considerations,  
G. Dreyfus, J. Lewiner,  
IEEE Conference on Electrical Insulation and Dielectric Phenomena (Gaithersburg, 1975).

Une méthode non destructive de détermination de la distribution spatiale des potentiels dans les diélectriques,  
D. Darmon, P. Laurenceau, G. Dreyfus, J. Lewiner,  
International Conference on Space Charge in Dielectrics (Wroclaw, 1977).

Les relais à électrets,  
J. Lewiner, D. Périno, G. Dreyfus,  
Journée d'étude sur les contacts à bas niveau (Paris, 1977).

Dispositif nouveau de détection des rayonnements ionisants,  
D. Périno, J. Lewiner, G. Dreyfus,  
Colloque International sur la Radioprotection (Stockholm, 1978).

Electret Driven Electrical Relays,  
D. Périno, G. Dreyfus, J. Lewiner,  
IEEE International Conference on Electrical Contact Phenomena (Chicago, 1978).

New Approaches to Charge Storage Analysis,  
J. Lewiner, G. Dreyfus,  
IEEE Conference on Electrical Insulation and Dielectric Phenomena (Pocono, 1978).

Character Recognition, Neural Networks and Statistical Physics,  
L. Personnaz, I. Guyon, J.C. Ronnet et G. Dreyfus,  
COGNITIVA 85 (Paris 1985).

Optimisation du Placement de Blocs par la Méthode Thermodynamique : Application à la conception du Plan de Masse d'un Circuit,  
P. Siarry, L. Bergonzi, G. Dreyfus,  
Colloque National sur la Conception de Circuits à la Demande (Grenoble, 1985).

Neural Network Design for Efficient Information Retrieval,  
L. Personnaz, I. Guyon, G. Dreyfus,  
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