

Curriculum Vitae of Albert Fert

- ◆ **Born:** March 7, 1938 - Carcassonne, France
- ◆ **Nationality:** French
- ◆ **Marital status:** married, two children



- ◆ **Professional address**

Unité Mixte de Physique CNRS/Thales
Route départementale 128
91767 Palaiseau Cedex, France
Phone: + 33 1 69 41 58 64
Fax: + 33 1 69 41 58 78
e-mail: albert.fert@thalesgroup.com

- ◆ **Education**

1957-1962: Ecole Normale Supérieure (Paris) - Maîtrise de Mathématiques, Maîtrise de Physique

1963: Université de Paris - Thèse de 3^{ème} cycle, Title "NMR of hydrogen absorbed by palladium", prepared at Institut d'Electronique Fondamentale (Orsay) and Laboratoire de Spectrométrie Physique (Grenoble). Supervisor: P. Averbuch

1970: Université Paris-Sud - Doctorat ès Sciences Physiques, Title: "Transport properties of nickel et iron", prepared at Laboratoire de Physique des Solides (Orsay). Supervisor: I. A. Campbell

- ◆ **Main Positions**

1962-1964: Assistant at Université de Grenoble

(1964-1965 : military service)

1965-1976: Maître Assistant at Université Paris-Sud (Orsay, France)

from 1976: Professor of Physics at Université Paris-Sud (Orsay, France)

♦ **Research**

1970-1995: Leader of a research group at Laboratoire de Physique des Solides (Université Paris-Sud, Orsay)

From 1995: Scientific Director at Unité Mixte de Physique CNRS/Thales (Orsay)

Experimental and theoretical research in condensed matter physics (metals, magnetism, magnetic nanostructures, spin electronics). Discovery of the Giant Magnetoresistance in 1988. Major contributions to the development of spintronics.

- ♦ **Publications**: about 300 including contributions to 7 books (one of the articles, with 2455 citations in March 2003, was ranked 6 in the "Top Ten" of the most cited Physical Review Letters since the creation of PRL in 1953).

Around 13,000 citations according to ISI Web of Science

- ♦ **Invited Conferences**: about 200

♦ **Prizes, Honors**

1994: International Prize for New Materials (together with P. Grünberg and S.S.P. Parkin) of the American Physical Society (APS)

1994: Magnetism Prize (together with P. Grünberg) of the International Union for Pure and Applied Physics (IUPAP)

1994: Jean Ricard Grand Prize for Physics of the French Physical Society

1997: Hewlett-Packard Europhysics Prize (together with P. Grünberg and S.S.P. Parkin) of the European Physical Society (EPS)

2003: Gold Medal, French National Center for Scientific Research

2003: Doctor Honoris Causa, University of Dublin

2004: Elected member, French Academy of Sciences

2006: Doctor Honoris Causa, University of Kaiserslautern

2006/7: Wolf Prize in Physics (together with P. Grünberg)

2007: Japan Prize (together with P. Grünberg)

2007: Science Prize of the International Union for Vacuum Science, Technique and Applications (IUVSTA)

♦ **Selected publications and patents**

A. Fert and I. A. Campbell, Two current conduction in nickel, Phys. Rev. Lett. 21, 1190 (1968)

M. N. Baibich, J. M. Broto, A. Fert, F. Nguyen Van Dau, P. Etienne, G. Creuzet, A. Friederich and J. Chazelas, Giant magnetoresistance in Fe(001)/Cr(001) superlattices, Phys. Rev. Lett. 61, 2472 (1988)

P. M. Levy, S. Zhang and A. Fert, Electrical conductivity of magnetic multilayered structures, Phys. Rev. Lett. 65, 1643 (1990)

D. H. Mosca, A. Barthélémy, F. Petroff, A. Fert, P. A. Schroeder, W. P. Pratt, Oscillatory interlayer coupling in Co/Cu magnetic multilayers, J. Magn. Magn. Mater. 94, L1 (1991)

T. Valet and A. Fert, Theory of the perpendicular magnetoresistance in magnetic multilayers, Phys. Rev. B 48, 7099 (1993)

J. M. De Teresa, A. Barthelemy, A. Fert, J-P. Contour, F. Montaigne, P. Seneor, Role of the metal-oxide interface in determining the spin polarization of magnetic tunnel junctions., Science 296, 507 (1999)

M. Bowen, V. Cros, F. Petroff, A. Fert, C. Martinez Boubeta, A. Cebollada, F. Briones, Large magnetoresistance in Fe/MgO/FeCo(001) epitaxial tunnel junctions on GaAs(001), Appl. Phys. Lett. 79, 1655 (2001)

J. Grollier, V. Cros, A. Hanzic, J. M. George,, H. Jaffres, A. Fert, G. Faini,, J. Ben Youssef, H. Le Gall, Magnetization reversal by spin injection in Co/Cu/Co pillars, Appl. Phys. Lett. 78, 3663 (2001)

A. Fert, H. Jaffrès, Conditions for efficient spin injection from a ferromagnetic metal into a semiconductor, Phys. Rev. B 64, 184420 (2001)

S. Zhang, P. M. Levy, A. Fert, Mechanisms of spin-polarized current-driven magnetization switching, Phys. Rev. Lett. 88, 236601 (2002)

L.E. Hueso, J.M. Pruneda, V. Ferrari, G. Burnell, J.P. Valdes-Herrera, B.D. Simons, P.B. Littlewood), A. Fert, N.D. Mathur, Transformation of spin information into large electrical signals using carbon nanotubes, Nature 445, 410 (2007)

O. Boulle, V. Cros, J. Grollier, L. G. Pereira, C. Deranlot, F. Petroff, G. Faini, J. Barnas, A. Fert, Shaped angular dependence of the spin-transfer torque and microwave generation without magnetic field, Nature Physics 3, 492 (2007)

A. Fert, A. Schuhl, F. Petroff et L. Schelp, Tunnel junction-based magnetic sensor,, French patent n° 97 14764 (1997), European patent n° 98 955734.3 (1998), US patent n° 09/341 694 (1998)

H. Jaffrès, J-M. George, B. Winter, R. Mattana, F. Nguyen Van Dau, A. Fert, Ferromagnetic-semiconductor dual channel heterojunction device, World Patent WO 2005/ 109518 A 1

Spin electronics device, V. Cros, J. Grollier, M. Munoz Sanchez, A. Fert, F. Nguyen Van Dau, World Patent WO 2006/ 064022 A 1