Curriculum vitae

Full name: Peter Frank de Châtel Date of birth: 14 February 1940
Nationality: Dutch/Hungarian Place of birth: Budapest, Hungary

Education

1958-1963 Towards Diploma in physics, Eötvös University, Budapest
1965-1966 Towards M.Sc. in metallurgical engineering, University of Illinois, Urbana, IL, USA
1966-1968 Towards Ph.D. in physics, Eötvös University, Budapest

Appointments

1963-1968 Teaching Assistant at Eötvös University, Budapest
1965-1966 (on leave) Research Assistant at University of Illinois

1968-1974 Research Associate at the University of Amsterdam, Netherlands
1971-1972 (on leave) Research Assistant at Cavendish Laboratory, University of Cambridge, UK
1973-1974 part-time Research Consultant at the Kamerlingh Onnes Laboratory, Leiden, Netherlands

1974-1980 Reader at the University of Amsterdam
1975 (on leave) Visiting Professor at the Catholic University of Leuven, Belgium
1979-1980 (on leave) Visiting Scientist at IBM Thomas J. Watson Research Center, Yorktown Heights, NY, USA

1980-2001 Professor of Physics at the University of Amsterdam
1983-2001 (part time) Publishing Editor with Elsevier Science B.V., Amsterdam

February to August 2001, Visiting Scientist at Monash University, Melbourne, Australia

September 2001-May 2002, Visiting Professor at New Mexico State University, Las Cruces, NM, USA

September to December 2002, Visiting Professor at the University of Michigan, Ann Arbor, MI, USA

January to March/April 2003, 2004, 2005, 2006, 2007 and 2008 Visiting Professor at AlNeelain University, Khartoum, Sudan

May to December 2003 and August to December 2004 and 2005, Visiting Professor at New Mexico State University, Las Cruces, NM, USA

April/May to June 2005, 2006 and 2007 Visiting Scientist at ATOMKI, Debrecen, Hungary

Research experience: Lattice defects in solids
Electronic structure of disordered alloys
Cohesion in alloys and intermetallic compounds
Magnetic oxides
Band theory of magnetism, spin fluctuations
Hard magnetic materials, anisotropy
Magnetic nanoparticles, ferrofluids
Superconductivity, vortex state

Teaching experience: Electromagnetism (to students of engineering)
Modern Physics
Quantum mechanics (elementary and advanced)
Solid-state physics
Glasses and amorphous solids
Cohesion and structure of alloys and compounds
Magnetism and magnetic materials
Superconductivity

Courses on these subjects have been given at the

University of Amsterdam,

Catholic University of Leuven,
University of Khartoum, Sudan,

Al Neelain University, Khartoum, Sudan

Institute of Metal Research, Shenyang, China,

University of Debrecen, Hungary,

Eötvös University, Budapest, Hungary,

New Mexico State University, Las Cruces, NM, USA

University of Michigan, Ann Arbor, MI, USA

P.F. de Châtel, Publications > 71 ; Citations > 2300

157 T internal magnetic field in $Fe[C(SiMe_3)_3]_2$ compound at 20 K, E. Kuzmann, R. Szalay, A. Vértes, Z. Homonnay, I. Pápai, P.F. de Châtel and L. Szepes, to be published in Hyperfine Interactions (2008)

Response of $La_{0.8}Sr_{0.2}CoO_{3-\delta}$ to perturbations on the CoO_3 sublattice, Z. Németh, Z. Homonnay, F Árva, Z. Klencsár, E. Kuzmann, A. Vértes, J. Hakl, S. Mészáros, K. Vad, P.F. de Châtel, G. Gritzner, Y. Aoki, H. Konno and J.M. Greneche, Eur. Phys. J. B 57 (2007) 257

Saturation effect in the optical response of Ag-nanoparticle fractal aggregates, A.K.

Buin, P.F. de Châtel, V.P. Drachev and V.M. Shalaev, Phys. Rev. B 73 (2006) 035438

Magnetic Field effects in $UNi_{1/3}Ru_{2/3}Al$, A.M. Alsmadi, S. El-Khatib, P.F. de Châtel, H. Nakotte, A.H. Lacerda, M.H. Jung, A.V. Andreev, F. Honda and V. Sechovský, J. Appl. Phys. 97 (2005) 10A919

Evidence for the Griffith phase in pure and Y-, Ca- and Cr-doped $LaSr_2Mn_2O_7$ manganites, H.M. Ibrahim, O.A. Yassin, P.F. de Châtel and S.N. Bhatia, Solid State Comm. 134 (2005) 695

Non-magnetic defect in the two-dimensional s = ½ Heisenberg antiferromagnet with honeycomb lattice, P.F. de Châtel, J. Chadwick, A.M. Mulders and T.J. Hicks, Physica B 344 (2004) 117

Magnetic and electronic properties of $Eu_{0.8}Sr_{0.2}CoO_3$, J. Hakl, S. Meszaros, K. Vad, L. Kerekes, P.F. de Châtel, Z. Nemeth, Z. Homonnay, A. Vertes, Z. Klencsar, E. Kuzmann, K. Kellner, G. Gritzner, Czechoslovak J. Phys. 54 (2004) D307-D310

Probability and spin densities of rare-earth tri-positive ions, K. Ayuel and P.F. de Châtel, J. Magn. Magn. Mater. 277 (2004) 43

Field-induced magnetic structures in UNiGe, K. Prokes, H. Nakotte, E. Bruck, P.F. de Châtel, V. Sechovsky, Appl. Phys., A74 (2002) S757-S759

Toroid dipole moments and hybridization in uranium compounds, P.F. de Châtel and A.K. Buin, Physica B 319 (2002) 193

Canted ferromagnetic structure of UNiGe in high magnetic fields, K. Prokeš, P.F. de Châtel, E. Brück, F.R. de Boer, K. Ayuel, H. Nakotte and V. Sechovský, Phys. Rev. B 65 (2002) 144429

Charge, current and spin densities of a two-electron system in Russell-Saunders spin-orbit coupled eigenstates, K. Ayuel, P.F. de Châtel and Salah Amani, Physica B 315 (2002) 29

Heavy fermions: recent developments and open questions, P.F. de Châtel, Phil. Mag. B 81 (2001) 1389

Identification of a disordered magnetic phase in pure nanocrystalline iron, S. Mészáros, K. Vad, J. Hakl, L. Kerekes, P. Gurin, M. Kis-Varga, S. Szabó, D.L. Beke and P.F. de Châtel, Phil. Mag B 81 (2001) 1597

Spin and orbital contributions to the magnetic scattering of neutrons, K. Ayuel and P.F. de Châtel, Phys. Rev. B 61 (2000) 15213

The ambiguity of the atomic magnetization, K. Ayuel and P.F. de Châtel, Physica B266 (1999) 256-266

The magnetic field generated by an electron in angular-momentum eigenstates, K. Ayuel and P.F. de Châtel, Eur. J. Phys. 20 (1999) 53

Anisotropic exchange interactions in UNiGe, P.F. de Châtel, K. Prokes, H. Nakotte, A. Purwanto, V. Sechovsky, L. Havela, E. Bruck, R.A. Robinson and F.R. de Boer, J. Magn. Magn. Mater., 177 (1998) 785-786.

Structure of intermetallic compounds, P.F. de Châtel, Solid State Phenomena 56 (1997) 1-12

Spin configurations and magnetization processes in a free-sample two-sublattice system, Z.-D. Zhang, T. Zhao, P.F. de Châtel and F.R. de Boer, J. Magn. Magn. Mater, 174 (1997) 269

Hybridization effects in U_2T_2X compounds: Magnetic structures of U_2Rh_2Sn and U_2Ni_2In, H. Nakotte, A. Purwanto, R.A. Robinson K. Prokeš, J.C.P. Klaasse, P.F. de Châtel, F.R. de Boer, L. Havela V. Sechovský L.C.J. Pereira, A. Seret, J. Rebizant, J.C. Spirlet and F. Trouw, Phys. Rev. B 53 (1996) 3263

Magnetization processes of free- and fixed-single-crystal antiferromagnets, Z.G. Zhao, P.F. de Châtel, F.R. de Boer, K.H.J. Buschow, J. Appl. Phys. 79 (1996) 4626-4628.

Magnetic – anisotropy and exchange interaction in $(Er,Y)_2Co_7B_3$, Z.G. Zhao, F.R. de Boer, K.H.J. Buschow, P.F. de Châtel, Physica B 211 (1995) 124-127

Magnetic properties of $(Er,Y)_2Co_{11}B_4$, Z.G. Zhao, F.R. de Boer, K.H.J. Buschow, P.F. de Châtel, J. Magn. Magn. Mater, 140 (1995) 957-958

Magnetic properties of $LaFe_{13-X}Al_XN_Y$ compounds, J.P. Liu, N. Tang, F.R. de Boer, P.F. de Châtel, K.H.J. Buschow, J. Magn. Magn. Mater, 140 (1995) 1035-1036

Spin configurations in the absence of a magnetic field in a two-sublattice system, Z. Zhi-Dong, P.F. de Châtel and F.R. de Boer, J. Magn. Magn. Mater. 147 (1995) 74

Simple calculation of hybridization effects in UTX and U_2T_2X compounds, K. Prokeš, E. Brück, H. Nakotte, P.F. de Châtel and F.R. de Boer, Physica B 206-207 (1995) 8

High-field magnetization of R_2Co_{17} and$R_2Co_{17}N_x$ compounds, J.P. Liu, Z.D. Zhang, D.C. Zeng, N. Tang, P.F. de Châtel, F.R. de Boer and K.H.J. Buschow, IEEE Transactions on Magnetics, 30 (1994) 613

On the 4f-3d exchange interaction in intermetallic compounds, J.P. Liu, F.R. de Boer, P.F. de Châtel, R. Coehoorn, K.H.J. Buschow, J. Magn. Magn. Mater. 132 (1994) 159

Electronic properties of UNiAl in high magnetic fields, E. Brück, H. Nakotte, F. R. de Boer, P.F. de Châtel, H.P. van der Meulen, J.J.M. Franse, A.A. Menovsky, N.H. Kim-Ngan, L. Havela, V. Sechovský, J.A.J. Peerenboom, N. C. Tuan and J. Sebek Phys. Rev. B 49 (1994) 8852

Non-linear diffusion equation and relaxation processes in solids, Z. Kozioł and P.F. de Châtel, IEEE Transactions on Magnetics, 30 (1994) 1169

Magnetization of a superconductor: Results from the critical-state model, Z. Kozioł, J.J.M. Franse, P.F. de Châtel A.A. Menovsky, Phys. Rev. B 50 (1994) 15978

Magnetic coupling and magnetic transitions in interstitial compounds of the series $Er_2Fe_{17}C_x$, J. P. Liu, F. R. de Boer, P. F. de Châtel and K. H. J. Buschow, Phys. Rev. B 50 (1994) 3005

Determination of the crystal-field parameters for CePtSn, M. Divis, H. Nakotte, F.R. de Boer, P.F. de Châtel and V. Sechovský, *J. Phys.: Condens. Matter* 6 (1994) 6895

Comparison of giant magnetoresistance in multilayer systems and Uranium - compounds, H. Nakotte, K. Prokes, E. Bruck, P.F. de Châtel, F.R. de Boer, V. Sechovský, L. Havela, H. Fujii, J. Appl. Phys., 75 (1994) 6522-6524

The free-powder magnetization of ferrimagnetic rare-earth transition-metal compounds, - Basal – plane anisotropy, Z.G. Zhao, N. Tang, F.R. de Boer, P. F. de Châtel, K.H.J. Buschow, Physica B 193 (1994) 45-56

The free-powder magnetization of ferrimagnetic rare-earth transition-metal compounds, Z.G. Zhao, P. F. de Châtel, F.R. de Boer, K.H.J. Buschow, J. Appl. Phys. 73 (1993) 6522

Electronic properties of $CePd_xRh_{1-x}In$, E. Brück, H. Nakotte, K. Bakker, F.R. de Boer, P.F. de Châtel, J.-Y. Li, J.P. Kuang and F.-M. Yang, J. Alloys and Compounds, 200 (1993) 79

Evidence for nonlinear flux diffusion from magnetization relaxation in $Bi_2Sr_2CaCu_2O_8$ *single crystal,* Z. Koziol, P. F. de Châtel, J.J. M. Franse, Z. Tarnawski, A.A. Menovsky, Physica C 212, (1993) 133-141

The free-powder magnetization of ferrimagnetic rare-earth transition-metal compounds, Z.G. Zhao, X. Li, J.H.V.J. Brabers, P. F. de Châtel, F.R. de Boer, K.H.J. Buschow, J. Magn. Magn. Mater. 123 (1993) 74

Specific heat of unial in high magnetic fields, E. Bruck, H.P. Vandermeulen, A.A. Menovsky, F.R. de Boer, P. F. de Châtel, J.J.M. Franse, J.A.A.J. Ferenboom, T.T.J.M. Berendschot, H. Vankempen, A.L. Havela, V. Sechovsky, J. Magn. Magn. Mater. 104 **(** 1992) 17-18

High field magnetization processes in Actinide intermetallics, J.J.M. Franse, F.R. de Boer, P. F. de Châtel, P.H. Frings, A.A. Menovsky, J. Appl. Phys., 69 (1991) 5903-5908

Positron – annihilation study of the electronic structure of URu_2Si_2, G.J. Rozing, P.E. Mijnarends, A.A. Menovsky, P. F. de Châtel, Phys. Rev. B 43 (1991) 9523-9531

Specific heat and high field magnetoresistivity of $Ce(Pd_{1-x}Ag_x)_3$, P.A. Veenhuizen, J.B. Bouwer, F.R. de Boer, P.F. de Châtel, J. Magn. Magn. Mater. 76-77 (1988) 165-7

Consequences of an electron-phonon bound state for magnetization and susceptibility in $CeAl_2$, Aarts, F.R. de Boer, P.F. de Châtel, J. Magn. Magn. Mater. 49 (1985) 271-6

The magnetic behaviour of $CePd_3$ at low temperatures, J. Aarts, F.R. de Boer, P.F. de Châtel, A. Menovsky, Solid State Communications 56 (1985) 623-6.

Free electron scattering on a localised potential with cubic symmetry: application to AuNi, J.A. Julianis, P.F. de Châtel, J. Physics F (Metal Physics) 14 (1984) 149-6**6.**

Low-temperature measurements of the thermoelectric power and resistivity of dilute AuY, AuZr, AuNb, AuRh, AuPd and AuPt alloys; I. Temperature dependence, J.A. Julianis, F.F. Bekker, P.F. de Châtel, J. Physics F (Metal Physics) 14 (1984) 2061-76**.**

Low-temperature measurements of the thermoelectric power and resistivity of dilute AuY, AuZr, AuNb, AuRh, AuPd and AuPt alloys; II. Phase-shift analysis, J.A. Julianis, F.F. Bekker, P.F. de Châtel, J. Physics F (Metal Physics) 14 (1984) 2077-86**.**

Model predictions for the enthalpy of formation of transition metal alloys II. A.K. Niessen, F.R. de Boer, R. Boom, P.F. de Châtel, W.C.M. Mattens, and A.R. Miedema, Calphad: Computer Coupling of Phase Diagrams and Thermochemistry. 7 (1983) 51

Mixed valence systems, P.F. de Châtel, Physica B 110 (1982) 1849-1856

Mixed-valence systems as Fermi liquids, P.F. de Châtel, Solid State Commun. 41 (1982) 853

The RKKY interaction in disordered systems, P.F. de Châtel, J. Magn. Magn. Mater. 23 (1981) 28

Systematics in intermetallic compounds containing intermediate-valent ytterbium, J.C.P. Klaasse, F.R. de Boer and P.F. de Châtel, Physica B & C 106 (1981) 178-94

Cohesion in alloys − fundamentals of a semi-empirical model, A.R. Miedema, F.R. de Boer and P.F. de Châtel, Physica B 100 (1980) 1.

Macroscopic shape effect due to quadrupole orientation in single crystals of Mg with heavy RE impurities, M.H. de Jong, H. Holscher, P.F. de Châtel, J. Bijvoet, J. Magn. Magn. Mater. 15-18 (1980) 17-18

Virtual bound states and f-bands in mixed-valent systems, P.F. de Châtel, Physica B & C 102 (1980) 335-40

Hydrogen absorption and magnetic properties of intermetallic compounds based on 3d elements, K.H.J. Buschow, P.F. de Châtel, Pure and Applied Chemistry 52 (1980) 135-46

Virtual bound states and f bands in mixed-valent systems, P.F. de Châtel, Physica B 102 (1980) 335

Magnetic behaviour of quasibinary $Ce(In, Sn)_3$ compounds, W.H. Dijkman, F.R. de Boer, P.F. de Châtel and J. Aarts, J. Magn. Magn. Mater. 15 (1980) 970

Intermediate-valence state of Ce in pure and La-substituted $CeSn_3$, W.H. Dijkman, F.R. de Boer, P.F. de Châtel, Physica B & C 98 (1980) 271-81

Nuclear resonance and relaxation in intermediate-valent YbCuAl, D.E. MacLaughlin, F.R. de Boer, J. Bijvoet, P.F. de Châtel and W.C.M. Mattens, J. Appl. Phys. 50 (1979) 2094

Intermediate-valence state of Yb in Y- and Gd-substituted YbCuAl, W.C.W. Mattens, P.F. de Châtel, A.C. Moleman, F.R. de Boer, Physica B & C 96 (1979) 138-43**.**

Model calculation of the magnetic behaviour of mixed-valent systems, P.F. de Châtel, J. Aarts and J.C.P. Klaasse, Commun. on Physics 2 (1977) 151

Magnetic properties of ytterbium intermetallic compounds with intermediate valency, J.C.P. Klaasse, W.C.W. Mattens, F.R. de Boer, P.F. de Châtel, Physica B & C 86-88 (1977) 234-6**.**

Charge distribution in heterovalent alloys, G G Robinson and P.F. de Châtel, J. Phys. F: Met. Phys. 5 (1975) 1502

Low temperature specific heat of Ni_3Al and Ni_3Ga, W de Dood and P.F. de Châtel, J. Phys. F: Met. Phys. **3** (1973) 1039

Possible explanations for the low temperature resistivities of Ni_3Al and Ni_3Ga alloys in terms of spin density fluctuation theories, J.H.J. Fluitman, R. Boom, P.F. de Châtel, C.J. Schinkel, J.L.L. Tilanus, B.R. de Vries, J Physics F : Met. Phys. 3 (1973) 109-17.

Paramagnons in uniformly exchange enhanced magnetic systems, P.F. de Châtel and E.P. Wohlfarth, Comments on Solid State Physics 5 (1973) 133

Empirical description of the role of electronegativity in alloy formation, A.R. Miedema, F.R. de Boer and P.F. de Châtel, J. Phys. F: Metal. Phys. 3 (1973) 1558

The theory of very weak itinerant ferromagnetism applied to Ni_3Ga and Ni_3Al, P.F. de Châtel and F.R. de Boer, Physica 48 (1970) 331