

List of Articles and Fields

Entry	Article	Author Name	
Biophysics	Genetic algorithms for biological systems	Kim	Sneppen
Biophysics	Electron transfer in metalloproteins	Salvatore	Cannistraro
Biophysics	Electron transfer in metalloproteins	Anna Rita	Bizzarri
Biophysics	Membrane and protein aggregates	Ole G.	Mouritsen
Biophysics	Engineering of protein folding	Sophie	Jackson
Biophysics	Single molecule methods	Yoshiharu	Ishii
Biophysics	Biomembranes	Cesare F.	Cametti Bordi
Biophysics	DNA and RNA	Maxim D.	Frank-Kamenetskii
Biophysics	Fluorescent proteins	Fabio	Beltram
Biophysics	Ion transport in biological membranes	Anna	Moroni
Biophysics	The physics of photosynthesis	Jennifer L.	Herek
Biophysics	Neuroscience	Edoardo	Boncinelli
Biophysics	Electrophysiology	Sara Emanuela	Pagnotta
Biophysics	Rhodopsin and the first step in vision	Robert R.	Birge
Biophysics	Ionizing radiation effects in biological materials	Andrea Francesca	Ottolenghi Ballarini
Biophysics	Electromagnetic biological effects	Carmela Bernard	Marino Veyret
Biophysics	Biomedical materials	Julian Larry	Jones Hench
Crystal Binding (interatomic forces)	Van der Waals bonding and inert gases	J.S.	Rutherford
Crystal Binding (interatomic forces)	Ionic bonding and crystals	Mike	Finnis
Crystal Binding (interatomic forces)	Metallic bonding and crystals	Dave	Willcock
Crystal Defects	Point Defects	W. Beall	Fowler
Crystal Defects	Dislocations	Vaclav	Vitek
Crystal Growth	Crystal growth - bulk (theory and models)	Jeffrey J.	Derby
Crystal Growth	Crystal growth - bulk (methods)	Georg Jochen	Müller Friedrich
Crystal Growth	Film growth and epitaxy (methods)	Francis	Lévy
Crystallography	Periodicity and lattices	Frank	Lamelas
Crystallography	Crystal symmetry	Theo Helmut	Hahn Klapper
Crystallography	Point groups	Theo	Hahn
Crystallography	Space groups	Th. W.J.	Janssen
Crystallography	Molecular crystallography	Matthias Manfred S.	Wilmanns Weiss

List of Articles and Fields

Crystallography	Determination of crystal structures	Riccardo	Spagna
Dielectric Properties	Complex dielectric function	Jan Ivan	Petzelt Rychetsky
Dielectric Properties	Local field effects	Wolfgang	Schattke
Electrical Properties	Ionic and mixed conductivity in condensed phases	Joachim	Maier
Electrical Properties	Piezoelectricity	Dragan	Damjanovic
Electrical Properties	Pyroelectricity	Paul	Muralt
Electrical Properties	Ferroelectricity	Arkadi Boris	Levanyuk Strukov
Electrical Properties	Electronic and Magnetic Properties of Transition Metal Compounds	John B.	Goodenough
Electrodynamics	Electrodynamics in continuous media	A.C.	Eringen
Electrodynamics	Quantum electrodynamics	Günter	Scharf
Electronic Structure	Electronic structure of atoms (theory)	V.M.	Ramaglia
Electronic Structure	Electronic structure of molecules (theory)	Roberto	Righini
Electronic Structure	Hartree and Hartree-Fock methods	G.C.	Strinati
Electronic Structure	Semi-empirical and empirical calculations	M.-H.	Whangbo
Electronic Structure	Density-functional theory	Eberhard K.U. Miguel Stefan	Gross Marques Kurth
Electronic Structure	Electron gas (theory)	Mario P.	Tosi
Electronic Structure	Fermi-liquid theory	Jozef	Spalek
Electronic Structure	Plane-wave methods (for electronic structure calculations)	Marvin L.	Cohen
Electronic Structure	Scattering methods (for electronic structure calculations)	J.S.	Faulkner
Electronic Structure	Tight binding method	Dimitris Michael J.	Papaconstantopoulos Mehl
Electronic Structure	Pseudopotential method	Giovanni B. Alessio	Bachelet Filipetti
Electronic Structure	Molecular dynamics calculations	Luciano	Colombo
Electronic Structure	Fermi surface measurements	Christoph	Bergemann
Electronic Structure	Effective masses	Allen L.	Wasserman
Electronic Structure	Electronic states of metals and alloys, including Fermi surface calculations	Hisamoto	Harima

List of Articles and Fields

Electronic Structure	Electronic states of elemental semiconductors	Giuseppe C.	La Rocca
Electronic Structure	Electronic states of semiconductor compounds and alloys	Jim	Phillips
Electronic Structure	Electronic states of insulators	Francesco	Casula
Electronic Structure	Electronic states of polymers and organic materials	Jean-Luc	Brédas
Electronic Structure	Electronic states of carbon materials	Philippe Jörg	Lambin Fink
Electronic Structure	Electronic states of photonic band-gap materials	L.C. Mario	Andreani Agio
Electronic Structure	Electronic structure of liquids	Mario P.	Tosi
Electronic Structure	Electronic structure of disordered solids and glasses	Stephen	Elliott
Electronic Structure	Electronic structure of Quasicrystals	Michael Uwe	Schreiber Grimm
Electronic Structure	Electronic structure of nanostructures	James R.	Chelikowsky
Electronic Structure	Impurity and defect states in metals and alloys	J.S.	Faulkner
Electronic Structure	Impurity and defect states in semiconductors	Hideaki	Ikoma
Electronic Structure	Impurity and defect states in insulators	A.M. Alexander	Stoneham Shluger
Electronic Structure	Crystal field splitting	Isaac B.	Bersuker
Electronic Structure	Jahn-Teller effect	Eugenio	Vogel
Electronic Structure	Surfaces and interfaces (electronic structure)	Gianfranco	Chiarotti
Electronic Structure	Surfaces and interfaces (electronic structure)	Claudio	Goletti
Electronic Structure	Ballistic transport	Mircea	Dragoman
History	History of crystal structure determination	Davide	Viterbo
History	History of Ceramics	Itaru	Yasui Inoue
History	History of polymers	Michael M. Paul C. Frederick	Coleman Painter Seitz
History	History of silicon		
Instruments/devices	Sensors	Arnaldo	D'Amico
Instruments/devices	Diamond anvil cells	William	Bassett
Instruments/devices	Modulators	Paolo	Laporta
Instruments/devices	Modulators	Gianluca	Galzerano
Instruments/devices	Optical instruments	Guglielmo	Tino

List of Articles and Fields

Instruments/dev ices	Devices for telecommunications	Mitsuru	Sugawara
Instruments/dev ices	Semiconductor devices	Takuji	Takahashi
Instruments/dev ices	Light emitting diodes	E. Fred Thomas	Schubert Gessmann
Instruments/dev ices	Transistors	Yoshiro	Hirayama
Instruments/dev ices	Quantum devices of reduced dimensionality	Marius	Grundmann
Instruments/dev ices	Memory devices - Volatile Memories	Giorgio	Baccarini
Instruments/dev ices	Semiconductor lasers	Markus-Christian	Amann
Instruments/dev ices	Integrated circuits	M.	van Rossum
Instruments/dev ices	Lithography masks and pattern transfer	Carmelo	Romeo
Instruments/dev ices	Micromechanical devices and systems	Hiroyuki	Fujita
Instruments/dev ices	Thermoelectric and energy conversion devices	Jeff W.	Sharp
Lattice Dynamics	Vibrational modes	Krzysztof	Parlinski
Lattice Dynamics	Structural instability and soft modes	Roger A.	Cowley
Lattice Dynamics	Anharmonic effects	Mikhail	Katsnelson
Lattice Dynamics	Aperiodic crystals	Jens-Boie	Suck
Magnetic properties	History of magnetism	J.M.D.	Coey
Magnetic properties	Magnetic interactions	Gerfried	Hilscher
Magnetic properties	Magnetic order	D.	Givord
Magnetic properties	Localised and itinerant magnetism	Hideji	Yamada
Magnetic properties	Diamagnetism	Peter	de Châtel
Magnetic properties	Paramagnetism	Peter	de Châtel
Magnetic properties	Magneto-elasticity	R.M. A.	Ibarra García del Moral
Magnetic properties	Magnetic materials and applications	H.	Szymczak
Magnetic Properties	Magnetic domains	Danilo	Pescia
Magnetic Properties	Disordered magnetic systems	Per	Nordblad
Magnetic properties	Strongly correlated electron systems	Hilbert	von Löhneisen
Materials	Metallic alloys	Marcello	Baricco
Materials	Iron alloys	Michael	Ferry

List of Articles and Fields

Materials	Copper alloys	William	Hosford
Materials	Aluminum alloys	Edgar A.	Starke
Materials	Magnesium alloys	Howard	Jones
Materials	Titanium alloys	T.	Bieler
Materials	Ceramic materials	Kristen P.	Constant
Materials	Glasses	John M.	Parker
Materials	Catalysts	Alfred	Hagemeyer
		Anthony	Volpe
Materials	Co-polymers	Cornel	Hagiopol
Materials	Composites	Carl H.	Zweben
Materials	Polymer-polymer composites	Ramesh	Talreja
Materials	Ruthenates	Bernard	Raveau
Materials	Crystalline Organic Metals	Takehiko	Ishiguro
Processing	Solidification - Models and Simulations	J.A.	Dantzig
Materials			
Processing	Powder Processing - Models and Simulations	Ai-Bing	Yu
Materials			
Processing	Deformation processing	Dierk	Raabe
Materials			
Processing	Vapor deposition techniques	Daniel	Gall
Materials	Vapor transport processing: models and simulations		
Processing		Claude Michael	Bernard Pons
Mathematics	Group theory in Materials Science - Foundations	Rainer Peter	Dirl Weinberger
Mathematics	Numerical approximation and analysis	Claude	Brezinski
Mathematics	Computer simulation techniques	Kurt	Binder
Mathematics	Crystal tensors	David	Lovett
Mathematics	Applications of crystal tensors	David	Lovett
Mechanical properties	Elastic Behavior	Keith	Bowman
Mechanical properties	Plastic Behavior	Günter	Gottstein
Mechanical properties	Tensile Testing	Krishan K.	Chawla
Mechanical properties	Mechanical behavior of thin films	Shefford P.	Baker
Mechanical properties	Creep	Terence G.	Langdon
Mechanical properties	Fatigue	W.O.	Soboyejo
Mechanical properties	Anelasticity	Willy	Benoit
Mechanical properties	Strengthening mechanisms in metals	Christopher A. Alan C.	Schuh Lund
Mechanical properties	Recovery recrystallization and grain growth	Niels	Hansen
Microscopy	Optical microscopy	George F.	Vander Voort
Microscopy	Scanning near field optical microscopy	Antonio	Cricenti
Microscopy	Confocal optical microscopy	Michael J.	Solomon
Microscopy	Transmission Electron Microscopy	Steve	Pennycook
Microscopy	Low energy electron microscopy	Ernst	Bauer
Microscopy	Scanning probe microscopy	Ronald	Reifenberger

List of Articles and Fields

Microscopy Nanostructured Materials	Photoelectron spectromicroscopy Semiconductor nanostructures	Julio Giorgio	Gomez-Herrero Margaritondo
Optical Properties	Optical properties of metals and metallic alloys	Bert Frank	Voigtländer Forstmann
Optical Properties	Optical properties of insulators	Yutaka	Toyozawa
Optical Properties	Optical properties of polymers and organic compounds	Takao Kotaro	Koda Kajikawa
Optical Properties	Optical properties of small particles and clusters	Toshihiro	Arai
Optical Properties	Optical properties of surfaces	Rodolfo	Del Sole
Optical Properties	Optical properties of nanostructures	Kikuo	Cho
Optical Properties	Polarizabilities Optical Properties of Surface Layers Enhanced Raman Scattering	Kikuo Giorgio	Cho Mattei
Optical Properties	Optical properties of treated surfaces	Hiromu	Ueba
Optics	Geometrical optics	Giuseppe	Molesini
Optics	Crystal optics	Yury	Svirko
Optics	Waves in random media	Azriel Z.	Genack
Optics	Imaging and optical processing	Franco	Gori
Optics	Holography	J.-P. Brigitte	Huignard Loiseaux
Optics	Photon statistics and coherence theory	Paolo	Mataloni
Optics	Interaction of light and matter	Gerard	Nienhuis
Optics	Electromagnetically induced transparency	Maurizio	Artoni
Optics	Optical properties of materials	G. Maddalena	Guizzetti Patrini.
Optics	Sum rules and Kramers-Krönig relations in linear optics	Franco	Bassani
Quantum Mechanics	Quantum mechanics (foundations)	Anthony J.	Leggett
Quantum Mechanics	Methods for quantum mechanics	Giovanni Maria	Prosperi
Quantum Mechanics	Classical statistical mechanics	Davide	Cassi
Quantum Mechanics	Quantum statistical mechanics	Rosario	Fazio
Quantum Mechanics	Nonlinear dynamics and nonlinear dynamical systems	Giulio Fritz	Casati Haake
Quantum Mechanics	Stochastic processes in physics and chemistry	Carlo	Cercignani
Quantum Mechanics	Elementary particles	Giuseppe	Marchesini
Quantum Mechanics	Nuclei	Ricardo A.	Broglia
Quantum Mechanics	Radioactivity	Walter Dorin	Greiner Poenaru

List of Articles and Fields

Quantum Mechanics	Nuclear fission and fusion	David	Brink
Quantum Mechanics	Nuclear models and methods	Ricardo A.	Broglia
Quantum Mechanics	Atoms	Antonio	Sasso
Quantum Mechanics	Molecules	Vincenzo	Schettino
Radiation Sources	X-ray sources	Augusto	Pifferi
Particle Sources	Electron and positron sources	Sergio Massimo	Tazzari Ferrario
Particle Sources	Neutron sources	Albert	Furrer
Radiation Sources	Synchrotron radiation	Giorgio Pasquale	Margaritondo Sodano
Relativity Scattering	Elastic scattering	Roberto	Colella
Scattering	Multi-circle diffractometry methods	Donald A.	Walko
Scattering	X-ray topography	Jose Jurgen	Baruchel Härtwig
Scattering	X-ray standing wave techniques	Michael J.	Bedzyk
Scattering	Inelastic Scattering Technique - Raman	Peter	Lemmens
Scattering	Inelastic Scattering Technique - Brillouin	Tomasz	Blachowicz
Scattering	Inelastic Scattering Technique - Brillouin	Marcos H.	Grimsditch
Scattering	Inelastic Scattering Technique - Electron	Mehmet	Erbudak
Scattering	Compton scattering techniques	Arun P. E.	Bansil Mijnarends
Scattering	Resonant scattering	Christian	Vettier
Scattering	Rayleigh scattering	Roberto	Piazza
Scattering	Inelastic X-ray scattering methods and applications	Michael Francesco	Krisch Sette
Scattering	Nuclear resonant scattering	Wolfgang	Sturhahn
Scattering	NMR methods for the determination of local structure	Robert	Blinç
Scattering	Electron spin resonance	Anne-Laure Alia	Barra Hassan
Spectroscopy	Muon spin rotation	Alex D.	Amato Andreica
Scattering	Cyclotron resonance in semiconductors	David R.	Leadley
Scattering	Shubnikov-de Haas and de Haas-van Alphen techniques	Werner	Biberacher
Semiconductors	Semiconductors (general properties)	Giorgio	Margaritondo
Semiconductors	Organic semiconductors	Reinhard	Scholz
Semiconductors	Electrons and holes	Giuseppe C.	La Rocca
Semiconductors Plasmons	Exciton theory	Peter W. Luis	Littlewood Mochán
Semiconductors	Polarons	Emmanuel	Rashba

List of Articles and Fields

Semiconductors	Polaritons	Marina L.	Litinskaya
Semiconductors	Electron-phonon interaction	J.T.	Devreese
Semiconductors	Spin density waves and magnons	Neil	Harrison
Semiconductors	Optical and infrared properties of semiconductors	Leonardo	Degiorgi
Semiconductors	Electronic Transitions	Antonio Paolo	Quattropani Schwendimann
Spectroscopy	X-ray absorption spectroscopy	Takeo	Jo
Spectroscopy	Time-resolved optical spectroscopies	Benoit	Deveaud Pledran
Spectroscopy	Optical properties of defect centers in insulating solids	Giuseppe	Baldacchini
Spectroscopy	Luminescence	Rosanna	Capelletti
Spectroscopy	Deep level spectroscopy and Auger spectra	Renato	Colle
Optics	Nonlinear optics	Stefano	Simonucci
Spectroscopy	Harmonic generation frequency conversion	Vittorio	Degiorgio
Spectroscopy	Optical bistability	Ilaria	Cristiani
Spectroscopy	Valence photoemission	Marco	Bellini
Spectroscopy	Core Photoemission	Rodolfo	Bonifacio
		Federico	Casagrande
		Giorgio	Margaritondo
		Paolo	Perfetti
		Paola	De Padova
Spectroscopy	Impedance spectroscopy and mobility spectra	Rosario A.	Gerhardt
Structures	Crystal structure	J.S.	Rutherford
Structures	Structure types and classifications	Tim	White
		Jacques	Plevert
Structures	Allotropy and Polymorphism	David R.	Gaskell
Structures	Liquid crystals	Satyendra	Kumar
Structures	Epitaxy	Leo	Miglio
		Adele	Sassella
Structures	Quasicrystals	Marc	de Boissieu
Structures	Micro and macrostructures	Gregory S.	Rohrer
Structures	Meso & nanostructures	Andrew	Horsfield
Structures	Orientation texture	Stuart	Wright
Structures	Polymer structures	Richard	Pethrick
Structures	Biological structures	R.M.	Ottenbrite
Superconductivity	General aspects of superconductivity	Anatoly	Larkin
Superconductivity	BCS theory	Karl-Heinz	Bennemann
Superconductivity	Ginzburg-Landau theory and vortex lattice	E.H.	Brandt
Superconductivity	Flux Quantization	Chang C.	Tsuei
Superconductivity	Tunnelling in superconductors	Andrew	Cleland
Superconductivity	Metallic superconductors	David	Bishop
Superconductivity	High Tc superconductors	Shi Xue	Dou

List of Articles and Fields

Superconductivity	Applications of Superconductivity	David Erkki	Bishop Thuneberg
Thermodynamics	Thermodynamic properties	Jurgen M	Honig
Thermodynamics	Irreversible thermodynamics and basic transport theory in solids	Jurgen M	Honig
Thermodynamics	Specific heat	Norman E. Robert A.	Phillips Fisher
Thermodynamics	Phases and phase equilibrium	Mary Anne	White
Thermodynamics	Phase transformation	John	Perepezko
Thermodynamics	Incommensurate phases	J. Manuel	Perez-Mato
Thermodynamics	Mathematical aspects of phase transformations	Jean-Claude	Tolédano
Thermodynamics	Diffusionless transformations	Hassel Albert Avadh	Ledbetter Migliori Saxena
Transport Properties	Electrical conductivity	Jack	Bass
Transport Properties	Thermal conductivity	Kamran	Behnia
Transport Properties	Mass transport	Roberto	Livi
Transport Properties	Radioactive tracer	Patrick	Brisset
Transport Properties	Thermoelectric effect	Gerald	Mahan
Transport Properties	Onsager relations	Carlo	Cercignani
Transport Properties	Quantum Hall Effect	Jürgen	Weis
Transport Properties	Charge transport at low temperatures	Tomasz Tadeusz Giuseppe C.	Dietl Skoskiewicz La Rocca
Optics	Semiconductor optics		
Environmental Science	Physical principles and applications	Antonio	Speranza
Optical Properties	Optical absorption and reflectance	Yutaka	Toyozawa
Superconductivity	Critical currents in superconductors	Alexander	Gurevich
Biophysics	Bioelectronics	Eugenii	Katz
Biophysics	Solid state NMR structural studies of proteins	Marc Colan	Baldus Hughes
Biophysics	Structural determination of metalloproteins	Claudio Giacomo	Luchinat Parigi
Biophysics	Electric and magnetic fields in cells and tissues	Jan	Gimsa
Biophysics	Surface scanning probe microscopy of biomolecules	Cesare	Ascoli
Biophysics	Elementary excitations in biological systems	Huub	de Groot

List of Articles and Fields

Crystallography	Magnetic point and space groups	Ron	Lifshitz
Biophysics	Physical properties of red blood cells	Angelo	Bifone
Biophysics	Folding and sequence analysis	Anna	Tramontano
Biophysics	Evolution and protein folding	Richard A.	Goldstein
Biophysics	Protein folding and aggregation	Ricardo A.	Brogli
Biophysics	Protein folding and aggregation	Guido	Tiana
Spectrometry	Ion beam analysis	James W.	Mayer
		Daniel	Adams
		Terry	Alford
History	History of neutrons and neutron scattering	Ferenc	Mezei
Radiation			
Sources	Laser radiation sources	Giancarlo	Reali
		Antonio	Agnesi
Thermodynamic s	Bose-Einstein condensation	Massimo	Inguscio
Magnetic Properties	Ferromagnetism	Nicola	Magnani
Electronic Structure	Electronic states of intermetallic compounds	Gordon	Miller
Electronic Structure	Magnetoresistance techniques applied to Fermi surfaces	Stephen J.	Blundell
Scattering	Cyclotron resonance in metals	John	Singleton
Materials	Highly porous metals and ceramics	T.W.	Clyne
		Athina E.	Markaki
		Paolo	Colombo
Biophysics	Fluorescent biomolecules	Francesco	Lenci
Semiconductors	Transport in two-dimensional semiconductors	Peter	Coleridge
Materials	Carbon matrix composites	Brian	Rand
Magnetic Properties	Magneto-caloric effect	Karl A.	Gschneidner
Combinatorial catalysis		Alfred	Hagemeyer
Combinatorial catalysis		Anthony	Volpe
Acoustics	Physical principles and applications to condensed matter physics	Julian	Maynard
Materials	Molecular monolayers and thin films	Milan	Sanyal
Electronic Structure	Electronic properties of semiconductor and metal clusters	Angiolino	Stella
Electronic Structure	Disorder and localization theory	Eleftherios N.	Economou
		Costas	Soukoulis
Electronic Structure	Electronic properties of deterministic aperiodic solids	Jean	Bellissard
Electronic Structure	Electrons in periodic potentials with magnetic fields	Jean	Bellissard
Electronic Structure	Electronic properties of semiconductor heterojunctions	Maria	Peressi
Electronic Structure	Dielectric polarization in solids	Raffaele	Resta
Electronic Structure	Recursive methods for electronic states	Roger	Haydock
Electronic Structure	Car-Parrinello molecular dynamics	Sandro	Scandolo

List of Articles and Fields

			Rousseau
Semiconductors	Isotopic effects in solids	Eugene E.	Haller
Instruments/Devices	Tunnelling devices	Mircea	Dragoman
Instruments/Devices	Quantum cascade lasers	Alessandro	Tredicucci
Quantum Mechanics	Critical phenomena	Sergio	Caracciolo
Quantum Mechanics	Quantum computation and chaos	Giulio	Casati
Optical Properties	Excitons in crystals	Boris P. A.A.	Zakharchenya Maksimov
		Sergei A. Vittorio	Permogorov Degiorgio
Materials	Optical fibres	L.	Pavesi
Materials	Porous silicon	Ricardo A.	Broglia
Materials	Molecular clusters	Peter	Schaaf
Microscopy	Mössbauer spectroscopy		
Magnetic Properties	Kondo effect (theory)	Bernard	Coqblin
Exciton complexes		Boris P.	Zakharchenya
Exciton complexes		Sergei A. Vladimir Z.	Permogorov Kresin
Materials	Manganites		
Optics	Sum rules and Kramers-Krönig relations in nonlinear optics	Franco	Bassani
Micro electro mechanical systems		Mircea	Dragoman
Mathematics	Group theory in materials science - Applications	Rainer Peter	Dirl Weinberger
Instruments/Devices	Memory Devices - Non-volatile devices	Giorgio	Baccarini
Transport Properties	Thermal Conductivity at low temperatures	Tadeusz Tomasz	Skoskiewicz Dietl
History	History of Semiconductors	Franco	Bassani