

EPS Condensed Matter Division Europhysics Prize

Award recipients

The EPS CMD Europhysics Prize is one of Europe's most prestigious prizes in the field of condensed matter physics. It is awarded every 2 years in recognition of recent work by one or more individuals for scientific excellence in the area of condensed matter physics.

2020 **Jörg Wrachtrup**

For pioneering studies on quantum coherence in solid-state systems, and their applications for sensing, and, in particular, for major breakthroughs in the study of the optical and spin properties of nitrogen vacancy centres in diamond.

2018 **Lucio Braicovich and Giacomo Claudio Ghiringhelli**

For the development and scientific exploration of high-resolution Resonant Inelastic X-ray Scattering (RIXS)

2016 **Peter Böni, Aleksandr N. Bogdanov, Christian Pfleiderer, Achim Rosch, Ashvin Vishwanath**

For the theoretical prediction, the experimental discovery and the theoretical analysis of a magnetic skyrmion phase in MnSi, a new state of matter.

2014 **Harold Y. Hwang, Jochen Mannhart, Jean-Marc Triscone**

For the discovery and investigation of electron liquids at oxide interfaces.

2012 **Steven Bramwell, Claudio Castelnovo, Santiago Grigera, Roderich Moessner, Shivaji Sondhi, Alan Tennant**

For the prediction and experimental observation of magnetic monopoles in spin ice.

2010 **Hartmut Buhmann, Charles Kane, Eugene Mele, Laurens W. Molenkamp and Shoucheng Zhang**¹⁹⁶³⁻²⁰¹⁸

For the theoretical prediction and the experimental observation of the quantum spin Hall effect and topological insulators.

2008 **Andre Geim and Kostya Novoselov**

For discovering and isolating a single free-standing atomic layer of carbon (graphene) and elucidating its remarkable electronic properties.

2006 **Antoine Georges, Gabriel Kotliar, Walter Metzner, Dieter Vollhardt**

For the development and application of the dynamical mean field theory.

2005 **David Awschalom, Tomasz Dietl, Hideo Ohno**

For their work on ferromagnetic semiconductors and spintronics.



2004 Michel Devoret, Daniel Esteve, Johan Mooij, Yasunobu Nakamura

For the realisation and demonstration of the quantum bit concept based on superconducting circuits.

2003 Heino Finkelmann, Mark Warner

For the discovery of a new class of materials called liquid crystal elastomers.

2002 Bernard Barbara, Jonathan Friedman, Dante Gatteschi, Roberta Sessoli, Wolfgang Wernsdorfer

For the development of the field of quantum dynamics of nanomagnets, including the discovery of quantum tunnelling and interference in dynamics of magnetization.

2001 Sumio Iijima, Cees Dekker, Thomas W. Ebbesen, Paul L. McEuen

Discovery of multi- and single-walled carbon nanotubes and pioneering studies of their fundamental mechanical and electronic properties.

2000 Paolo Carra^{†2005}, Gerrit van der Laan, Gisela Schütz-Gmeineder

Pioneering work in establishing the field of magnetic x-ray dichroism.

1999 Christian Glattli, Michael Reznikov

For developing novel techniques for noise measurements in solids leading to experimental observation of carriers with a fractional charge.

1998 T. Maurice Rice

For original contributions to the theory of strongly correlated electron systems.

1997 Albert Fert, Peter Gruenberg¹⁹³⁹⁻²⁰¹⁸, Stuart S. P. Parkin

For the discovery and contribution to the understanding of the giant magnetoresistance effect in transition-metal multilayers and demonstrations of its potential for technological applications.

1996 R.H. Friend

For pioneering work on semiconducting organic polymer materials and demonstration of an organic light emitting diodes.

1995 Yakir Aharonov, Michael V. Berry

For the introduction of fundamental concepts in physics that have profound impact on condensed matter science.

1994 Donald R. Huffman, Wolfgang Krätschmer, Harold W. Kroto¹⁹⁴⁰⁻²⁰¹⁶, Richard E. Smalley¹⁹⁴³⁻²⁰⁰⁵

For new molecular forms of carbon and their production in the solid state.

1993 Boris Leonidovitch Altshuler, Arkady Girshevich Aronov¹⁹³⁹⁻¹⁹⁹⁴, David E. Khmel'nitskii, Anatoly I. Larkin¹⁹³²⁻²⁰⁰⁵, Boris Spivak

For theoretical work on coherent phenomena in disordered conductors.



1992 Gerhard Ertl, Harald Ibach, J. Peter Toennies

For pioneering studies of surface structures, dynamics and reactions through the development of novel experimental methods.

1991 Klaus Bechgaard¹⁹⁴⁵⁻²⁰¹⁷, Denis Jérôme

For synthesis of a new class of organic metals and the discovery of their superconductivity and novel magnetic properties.

1990 Roberto Car, Michele Parrinello

For a novel and powerful method for the ab-initio calculation of molecular dynamics

1989 Frank Steglich, Hans-Rudi Ott, Gil G. Lonzarich

For pioneering investigations of heavy-fermion metals

1988 J. Georg Bednorz, Karl Alex Müller

For the discovery of high-temperature superconductivity.

1987 Igor K. Yanson

For point-contact spectroscopy in metals.

1986 Ferenc Mezei

For neutron spin echo spectroscopy.

1985 Jens Als-Nielsen, Michael Pepper

For the experimental study of low dimensional physics.

1984 Gerd K. Binnig, Heinrich Rohrer¹⁹³³⁻²⁰¹³

For the scanning tunnelling microscope.

1983 Isaac F. Silvera

For atomic and solid hydrogen.

1982 Klaus von Klitzing

For experimental demonstration of the quantized Hall resistance.

1980 Ole Krog Andersen, Andries R. Miedema¹⁹³³⁻¹⁹⁹²

For original methods for the calculation of the electronic properties of materials.

1979 Eric Albert Ash, J.H. Collins, Yurii Vasil'evich Gulaev, K.A. Ingebrigtsen, Edward George Sydney Paige¹⁹³⁰⁻²⁰⁰⁴

For the physical principles of surface acoustic wave devices.

1978 Zhores Ivanovich Alferov¹⁹²¹⁻²⁰¹⁹

For heterojunctions.

1977 Walter Eric Spear¹⁹²¹⁻²⁰⁰⁸



For amorphous silicon devices.

1976 **Wolfgang Helfrich**

For contributions to the physics of liquid crystal.

1975 **V.S. Bagaev, Leonid Vemiaminovich Keldysh¹⁹³¹⁻²⁰¹⁶, J.E. Pokrovsky, M. Voos**

For the condensation of excitons.

