



Engineering Materials Achievement Award

1970

For broad engineering achievements, including metals, fluids, and non-metallics, to achieve aircraft innovations through teamwork with many companies.

LOCKHEED AIRCRAFT CORPORATION

Clarence L. (Kelly) Johnson

1971

For pioneering efforts in the development of pelletized iron ore.

ARMCO STEEL CORPORATION

C. William Verity, Jr., Harry Holiday, Jr., Kenneth M. Haley

BETHLEHEM STEEL CORPORATION

Steward S. Cort, P. L. Steffensen

THE CLEVELAND CLIFFS IRON COMPANY

H. Stuart Harrison, Louis Erck

FORD MOTOR COMPANY (FORD STEEL DIVISION)

Henry Ford II, Robert Bodor

UNIVERSITY OF MINNESOTA

Malcolm Moos, Edward W. Davis

OGLEBAY NORTON COMPANY

John J. Dwyer, Henry K. Martin

PICKANDS MATHER & COMPANY

Robert S. Carey, Fred DeVaney, Herbert C. Jackson

REPUBLIC STEEL CORPORATION

W.B. Boyer, Charles M. White, William Kelley, Fred Darner



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1972

For the development of Zircaloy alloy systems and their contributions to nuclear energy.

WESTINGHOUSE BETTIS ATOMIC POWER LABORATORY

W.E. Shoupp, Kenneth M. Goldman, Robert B. Gordon, William A. Johnson, Donald E. Thomas

1973

For the development and application of man-made diamonds and borazon.

GENERAL ELECTRIC COMPANY

Arthur M. Bueche, Harold P. Bovenkerk, Francis P. Bundy, Robert C. DeVries, H. Tracy Hall, Rodney E. Hanneman, Lewis E. Hibbs, Jr., Herbert M. Strong, Robert H. Wentorf, Jr.

1974

For the development of the high silicon aluminum alloy, 390, for the Vega engine.

GENERAL MOTORS CORPORATION, CHEVROLET MOTOR DIVISION

James McLernon

REYNOLDS METALS COMPANY

William G. Reynolds, Sr.

1975

For contributions to the materials engineering aspects of gas turbine engines as exemplified by the development of directional solidification and an early total commitment to the introduction of titanium.

PRATT & WHITNEY AIRCRAFT

DIVISION OF UNITED TECHNOLOGIES CORPORATION

R. J. Coar, Elihu F. Bradley, Francis L. VerSnyder

1976

For the development of the Zincrometal coil-coated materials system in direct response to an automotive industry need for a corrosion-resistant, weldable and formable carbon steel for



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exterior, highly visible components. Diamond Shamrock conceived the idea, developed the chromate undercoat and established coil coating parameters. Wyandotte Paint Products developed the required zinc-rich paint topcoat. Ford Motor supported the material's development and conducted numerous tests to confirm its properties. Inland Steel recognized the material's merits and was the first steel producer to offer it commercially.

DIAMOND SHAMROCK CORPORATION

C.A. Cash, J. Lynn Fordham

FORD MOTOR COMPANY

Robert B. Alexander

INLAND STEEL COMPANY

Derrick L. Brewster, Henry P. Leckie, Peter F. Connor

WYANDOTTE PAINT PRODUCTS COMPANY

C.A. Brethen, Thurlow Geeck

1977

For the development and commercialization of an argon-oxygen decarburization process for stainless and high-alloy steels.

JOSLYN STAINLESS STEELS DIVISION, JOSLYN MANUFACTURING & SUPPLY COMPANY

Alan M. Smith, Edwin E. Hodgess

LINDE DIVISION, UNION CARBIDE CORPORATION

Frank Death

1978

For the development and application of Kevlar aramid fiber.

E. I. du PONT de NEMOURS & COMPANY INCORPORATED

David K. Barnes

Herbert Blades, Robert L. Hunter



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Stephanie L. Kwolek, Paul W. Morgan

1979

For the invention of hot isostatic pressing (HIP) and the development of basic HIP furnace technology.

BATTELLE MEMORIAL INSTITUTE

Sherwood L. Fawcett, Charles B. Boyer

1980

For development and commercialization of monolithic catalyst technology for control of automotive emissions.

ENGLEHARD INDUSTRIES DIVISION, ENGLEHARD MINERALS & CHEMICALS CORPORATION

Milton F. Rosenthal, Carl D. Keith

CORNING GLASS WORKS

Thomas C. MacAvoy, Rodney D. Bagley

TECHNICAL CERAMICS PRODUCTS DIVISION/3M

E. Wayne Bollmeier, James R. Johnson, William M. Brown

1981

For the development and commercialization of the Lucalox® High Pressure Sodium Lamp.

GENERAL ELECTRIC COMPANY LIGHTING BUSINESS GROUP

Ralph D. Ketchum, Charles I. McVey

1982

For the Sikorsky S-76 Civil Helicopter. High performance is largely attributable to the innovative application of advanced materials. Contributions to technology include the successful application to a commercial aircraft of relatively large amounts of advanced composites;



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contributions to society include the aircraft's fuel economy, low noise and economical use in offshore oil operations.

SIKORSKY AIRCRAFT DIVISION

UNITED TECH-NOLOGIES CORPORATION

Robert Zincone, A. Albert

1983

For development of materials processing technology capable of producing low optical loss, silica waveguide fibers, permitting introduction of lightwave systems into telecommunications applications.

CORNING GLASS WORKS

Richard Dulude, Donald B. Keck, Robert D. Maurer, Peter C. Schultz

WESTERN ELECTRIC COMPANY

and its subsidiary BELL TELEPHONE LABORATORIES, INC.

Donald E. Procknow, John B. MacChesney, Fred Partus

1984

For the development of, and subsequent contributions to Winchester Magnetic Recording Technology for computer disk file storage systems.

INTERNATIONAL BUSINESS MACHINES CORPORATION

John E. Bertram, Jack D. Kuehler, John M. Harker, Kenneth E. Haughton

1985

For the innovative combination of materials technologies utilized in the development and manufacture of the Pontiac Fiero.

PONTIAC MOTOR DIVISION

GENERAL MOTORS CORPORATION

Hulki Aldikacti



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1986

For the innovative combination of alloying materials and processing techniques developed for producing and implementing single crystal superalloy gas turbine airfoils.

PRATT & WHITNEY ENGINEERING DIVISION, UNITED TECHNOLOGIES CORPORATION

Irwin Mendelson, Maurice Gell

1987

For the development and application of ferromagnetic amorphous metal alloys to distribution transformers representing a major advance in the efficiency of electric power distribution systems.

GENERAL ELECTRIC COMPANY

Eugene J. Kovarik, Larry Lowdermilk, Lyman A. Johnson

METGLAS PRODUCTS DIVISION OF ALLIED SIGNAL, INC.

Frederic M. Poses, David C. Hill

ELECTRIC POWER RESEARCH INSTITUTE

Floyd Culler, Narain G. Hingorani

EMPIRE STATE ELECTRIC ENERGY RESEARCH CORPORATION

George E. Watkins, Herbert M. Kaufman

1988

For the development and implementation of a 33-layer metal and ceramic thermal conduction module and large printed circuit board technologies for high performance computer systems.

IBM CORPORATION

P.A. Toole, George A. Walker

Donald P. Seraphim

1989

For the development and application of sol-gel technology involving heterogeneous nucleation



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(seeding) in a new and innovative way to produce ceramic abrasives of exceptional strength, hardness and density.

NORTON COMPANY

John M. Nelson, Joseph E. Patchett

1990

For the development and implementation of transoceanic optical fiber communication systems providing increased use of data and video communications across oceans, thereby contributing to the uniting of the global community.

AT&T BELL LABORATORIES

John E. Berndt, Raymond D. Tuminaro, Kenneth L. Walker

1991

For a multifaceted, innovative application of materials engineering and precision process technology resulting in the development and manufacture of disposable thermal ink jet printheads.

HEWLETT-PACKARD COMPANY

David Packard, Frank Cloutier

1992

For innovative development and manufacture of a revolutionary combination of electronic packaging materials for high performance computers based on glass-ceramic/copper multilayer substrate.

IBM CORPORATION

Michael Attardo, Shakil Ahmed, Rao Tummala

1993

For the development and application of an innovative optical design and a unique combination of material and process technology resulting in a high performance engineered materials system, Scotchlite Brand Reflective Sheeting Diamond Grade Products, for safer traffic control.



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3M CORPORATION

M. George Allen, Roger H. Appeldorn

1994

For the invention, development and commercialization in electric devices of an entirely new class of high performance permanent magnets based on a novel rare earth-iron-boron compound produced by rapid solidification--Magnequench.

GENERAL MOTORS CORPORATION

John G. Larson, John J. Croat

1995

For the development and commercialization of aluminum coated ferritic stainless steels for automotive exhaust applications extending exhaust system life and providing significant economic and environmental benefits.

ARMCO INC.

Stephen W. Gilby

AK STEEL CORPORATION

Richard M. Wardrop, Jr., Farrell M. Kilbane

1996

For the development of the first commercial, positive deep-UV photoresist with outstanding resolution for the manufacture of Very Large Scale Integrated Circuits used in a new generation of electronic components for computers and telecommunication systems.

LUCENT TECHNOLOGIES, BELL LABORATORIES

William F. Brinkman, Elsa Reichmanis

OLIN MICROELECTRONIC MATERIALS

Steven T. Warshaw



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1997

For the materials selection, surface engineering and commercialization of the Multi-layer IR Reflective Lamp Coating, a breakthrough in energy efficiency in incandescent lighting technology.

GENERAL ELECTRIC COMPANY

Frederic (Fred) Ahlgren, John F. Ackerman

1998

For the development, implementation, and commercialization of a non-chromated anodizing process, providing significant environmental benefits and enhanced corrosion protection of aluminum parts and products.

THE BOEING COMPANY

Mr. Robert A. Davis

1999

For the innovative development, commercialization, and successful application of CARILON® aliphatic polyketone polymers as a new family of engineering materials.

SHELL CHEMICAL COMPANY

Dr. Dale R. Holecek, Mr. Richard L. Danforth

2000

For the development and mass commercialization of a colored decorative finishing process, commercialized as Lifeshine™, which confers enhanced resistance to abrasion, corrosion and chemical attack, extending the life of consumer products and providing significant environmental benefits by eliminating problematic manufacturing processes.

MOEN INCORPORATED

Mr. Jeffrey A. Svoboda, Dr. Timothy J. O'Brien

2001

For the development, application and commercialization of semi-solid injection molding of



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metals known as Thixomolding.

THIXOMAT, INCORPORATED

Dr. Raymond F. Decker, FASM, Dr. Robert D. Carnahan, FASM, Mr. David C. Dawson

2002

For the development and application of new aluminum alloy products with properties and strength weight ratios that make possible the design of future aircraft with improved payload and design safety margins.

ALCOA INC.

Mr. John W. Collins, III, Dr. William A. Cassada, III

2003

For development and application of injection-moldable plastics with exceptionally high thermal conductivities that enable new applications and opportunities for commercial use of thermoplastics.

COOL POLYMERS, INC.

Mr. Kevin McCullough, Dr. James D. Miller, Mr. Mikhail Sagal

2004

For development and application of amorphous thin-film hinge materials with superior mechanical and metallurgical properties for digital light processor (DLP) applications.

TEXAS INSTRUMENTS, INC.

Mr. John Van Scoter, Mr. James Baker

2005

For the development of Oxinium™ Oxidized Zirconium for use as a joint replacement material to improve the performance and increase the service life of total joint replacement systems.

SMITH & NEPHEW ORTHOPAEDICS

Mr. William L. Griffin



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Dr. Gordon Hunter

2006

For the development and commercialization of low-temperature colossal supersaturation (LTCSS), a novel surface hardening method for the carburization of austenitic stainless steels.”

SWAGELOK COMPANY

Mr. Carl E. Meece, Dr. Sunniva Collins,
Mr. Peter Williams

2007

For leadership in the development of Commercial High Superconductor Wire for use in solving key challenges related to the electric power grid and also enabling for major advances in military capability.

AMERICAN SUPERCONDUCTOR CORPORATION

Dr. Steven Fleshler, Dr. Alexander Otto

2008

For the development and commercialization of the Dow Corning® Active Protection System, a “Smart” Impact Protection Textile with Superior Defense and Comfort.

DOW CORNING CORPORATION

Christian A. Velasquez

2009

For the development of technology and manufacturing methods for Novel silver based nano-structured anti-microbial and anti-inflammatory coatings with significant and wide ranging clinical and patient benefits.

NUCRYST PHARMACEUTICALS

Dr. Robert E. Burrell
University of Alberta



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2010

For the Development of Material for an AOTF (Acousto-Optic Tunable Filter) based Hyperspectral Imager for Homeland Defense Applications

NORTHROP GRUMMAN CORPORATION

Narsingh Bahadur Singh, Patrick M. Antkowiak, John C. Johnson

2011

For the development of Porous Iron Aluminate for Filtration of Next-Generation Fossil Fuel Generating Facilities and Catalytic Refineries.

PALL CORPORATION

Dr. Daniel P. Henkel

2012

For the development of crucibles for directional solidification of silicon and allied technologies to make multi-crystalline silicon a reality for photovoltaic applications.

ARC Energy

Chandra P. Khattak

2013

For the world's first successful implementation of TiAl in aero engines.

GE AVIATION

Mr. David L. Joyce



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2014

For the development and implementation of lead-free solder assembly processes for server and storage systems.

IBM SYSTEMS AND TECHNOLOGY GROUP

Ms. Marie Cole

Mr. Matt Kelly

Dr. Jim Wilcox

2015

For the development, transfer, and successful commercialization of a novel platinum-chromium alloy for use in manufacturing the next generation of coronary stents.

NATIONAL ENERGY TECHNOLOGY LABORATORY

Mr. Paul C. Turner

Mr. Edward R. Argetsinger

Mr. Jeffrey S. Hansen

Dr. Paul D. Jablonski

2016

For development of a big area additive manufacturing (BAAM) technology and the materials that enable the technologies that can produce components ten times larger, one hundred times less expensive, and one hundred faster than previous systems.

OAK RIDGE NATIONAL LABORATORY

Dr. Vlastimil Kunc

Mr. Randall F. Lind

Dr. Brian K. Post



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2017

For the development of ES302 nanostructured thin film material that significantly increases service life, improves efficiency, and prevents many surface-initiated wear modes when applied to precision mechanical components such as rolling element bearings and gears.

THE TIMKEN COMPANY

Prof. Gary Doll

Dr. Ryan D. Evans

Mr. James R. Gnagy

Mr. Thomas E. Springer

2018

For the development and commercial production of Cu-Ni-MN high-performance weathering structural steels.

ILLINOIS DEPARTMENT OF TRANSPORTATION

Mr. Christopher Hahin

NORTHWESTERN UNIVERSITY

Prof. Semyon Vaynman

2019

For development and commercialization of NiTi alloys for corrosion resistant, high load capacity bearing, gear and mechanical component applications.

NASA GLENN RESEARCH CENTER AND THE ABBOTT BALL COMPANY

Mr. Craig W. Bond

Dr. Christopher Dellacorte

Dr. Ronald D. Noebe



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2020

The Development and Commercialization of the Cold Spray Helium Automated Recovery and Repair Production System (CS- HARRPS).

US ARMY RESEARCH LABORATORY, SERVICE ENGINEERING, QUANTUM TECHNOLOGY CORPORATION, VCR METAL SYSTEMS, MOOG, UNITED TECHNOLOGIES RESEARCH CENTER

Dr. Victor K Champagne, Fr., FASM

Mr. Aaron Nardi

Dr. Dennis Helfritsch

Dr. Ovi Marin

Mr. Rob Hrabe

Mr. Chris Howe

Mr. Lawrence Binek

2021

For the design and commercialization of novel high-performance carburizable steels enabling more durable, lighter weight transmission gears with increased power density.

QUES TEK INNOVATIONS

Mr. Jeff Grabowski

Mr. Chris Kern

Dr. Thomas S. Kozmel

Prof. Gregory B. Olson, FASM

Dr. Jason T. Sebastian

Mr. Kerem Taskin.



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2022

For the Development and Commercialization of the Ultrasonic Additive Manufacturing Process.

Dr. Dawn White

Mr. Matt Short

Mr. Mark Norfolk

Dr. Karl F. Graff

2023

“For the design, manufacturing, and commercialization of furnace components such as heat-treatment furnace rolls and radiant burner tubes fabricated using novel cast alumina-forming austenitic stainless steels.”

Dr. Govindarajan Muralidharan, FASM – Oak Ridge National Laboratory

Dr. Michael P. Brady, FASM - Oak Ridge National Laboratory

Mr. Roger Miller - Oak Ridge National Laboratory

Mr. Stanley M. Fauske – Cleveland Cliffs Plate LLC

Mr. Jim Myers – MetalTek International

Mr. Yukinori Yamamoto – Oak Ridge National Laboratory

Dr. Donovan Leonard – Oak Ridge National Laboratory

Mr. Sujit Das - Oak Ridge National Laboratory

Dr. Tanya Ros-Yanez – Cleveland Cliffs

Mr. Daniel Limpert – Duraloy Technologies, Inc.

Mr. Roman I. Pankiw - Duraloy Technologies, Inc.

Mr. Ryan A. Richter – Duraloy Technologies, Inc.



Engineering Materials Achievement Award

2024

Advanced sensor for real time monitoring of temperature and corrosion, capable of withstanding 2000 degrees F and delivering essential data before, during, and following exposure to wildfires.

Matergenics Materials and Energy Solutions

Dr. Mehrooz Zamanzadeh, FASM

Mr. Anil Kumar Chikkam

Ms. Carolyn Tome

Mr. Nathan Pace

Mr. Chris Desmond

Dr. Peyman Taheri

2025

For the development and commercialization of permeability-engineered nanocrystalline soft magnetic materials for high-efficiency power electronic and electric machines

COREPOWER MAGNETICS

Dr. Paul Ohodnicki, Jr.

Dr. Sam Kernion

Mr. Kevin Byerly

Ms. Leah Ohodnicki

Dr. Kyle Schneider

Mr. Tim Mould

Mr. Brett Riale

Ms. Meghan Laba

Dr. Veda Duppalli

Mr. Mark Nations

Prof. Michael McHenry



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