

11. Acronyms

Acronym	Definition
A/SP	Auto/Steel Partnership
A/T	Aftertreatment
ABRP	Advanced Battery Research Program
ACES	Advanced Collaborative Emissions Study
ACM	Acicular Mullite DPF material (Dow)
AEC	Advanced Engine Combustion
AFDC	Alternative Fuels Data Center
AHJ	Authorities Having Jurisdiction
AHSS	Advanced High Strength Steel
ANL	Argonne National Laboratory
APBF	Advanced Petroleum-Based Fuels
APCI	Air Products and Chemicals Inc.
APEEM	Advanced Power Electronics and Electric Machines Program
APRF	Advanced Powertrain Research Facility
APS	Advanced Photon Source
APU	Auxiliary Power Unit
ARRA	American Recovery and Reinvestment Act
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AVFL	Advanced vehicle/fuel/lubricant committee
AVTA	Advanced Vehicle Testing Activity
AVTC	Advanced Vehicle Technology Competition
BAM	Federal Institute for Materials Research and Testing (Germany)
BATT	Batteries for Advanced Transportation Technologies
BES	DOE Basic Energy Sciences
BLDC	Brushless DC motor
BMEP	Brake mean effective pressure
BMS	Battery management system
BSFC	Brake specific fuel consumption
BTE	Brake thermal efficiency
CAE	Computer Aided Engineering
CaFCP	California Fuel Cell Partnership
CAFÉ	Corporate Average Fuel Economy
CARB	California Air Resources Board
CDO	Code development organizations
CF	Carbon Fiber
CF	Cold flow
CFD	Computational fluid dynamics
CGD	Combustible gas detector

Acronym	Definition
CHF	Critical heat flux
CHHP	Combined Heat, Hydrogen, and Power
CLAMP	Center for Lightweighting Automotive Materials and Processing
CLEERS	Cross-Cut Lean Exhaust Emission Reduction Simulation
CLOSE	Collaborative Lubricating Oil Study on Emissions
CNG	Compressed Natural Gas
CNT	Carbon Nanotubes
CO2	Carbon Dioxide
CPI	Compact Power Inc.
CR	Compression ratio
CRADA	Cooperative Research and Development Agreement
CRC	Coordinating Research Council
CSA	Standards development organization
CSI	Current Source Inverter
CSIRO	Australian Commonwealth Scientific and Research Organization
CTE	Coefficient of thermal expansion
CVD	Chemical Vapor Deposition
CVS	Constant volume sampler
DARPA	Defense Advanced Research Projects Agency
DBC	Direct bonded copper
DEER	Diesel Engine-Efficiency and Emissions Research Conference
DISI	Direct injection spark ignited
DLA	Defense Logistics Agency
DLC	Diamond-like carbon
DLFT	Direct Compounded Long Fiber Thermoplastics
DOC	Diesel oxidation catalyst
DOD	Department of Defense
DoD	Depth of Discharge
DOE	Department of Energy
DPF	Diesel particulate filter
E85	85 percent ethanol blend with gasoline
ECES	Electrochemical Energy Storage team
EERE	Energy Efficiency and Renewable Energy
EGR	Exhaust Gas Recirculation
EIA	Energy Information Administration
EISA	Energy Independence and Security Act of 2007
EMC	Electromagnetic Compatibility
EPA	Environmental Protection Agency
EPAct	Energy Policy Act
EPRI	Electric Power Research Institute
ERC	Engine Research Center at University of Wisconsin

Acronym	Definition
ESS	Energy Storage System
ETEC	Electric Transportation Engineering Corporation
EV	Electric Vehicle
FACE	Fuels for Advanced Combustion Engines
FCH2V	Fuel Cell, Hydrogen, and Hybrid Vehicle
FCHEV	Fuel cell hybrid electric vehicle
FE	DOE Office of Fossil Energy
FEA	Finite Element Analysis
FEERC	Fuels, Engines, and Emissions Research Center
FFV	Flexible fuel vehicle
FFVA	Fully flexible variable valve actuation
FMEP	Friction Mean Effective Pressure
FSEC	Florida Solar Energy Center
FSP	Friction Stir Processing
FSW	Friction Stir Welding
FTIR	Fourier Transform Infrared Spectroscopy
FTP	Federal Test Procedure
FY	Fiscal Year
GATE	Graduate Automotive Technology Education
GBL	Gamma butyrolactone
GGE	Gasoline Gallon Equivalent
GHG	Greenhouse gases
GPRA	Government Performance and Results Act
GREET	Greenhouse gases, Regulated Emissions and Energy use in Transportation
GTI	Gas Technology Institute
GTR	Global Technical Regulation
HAMMER	Hazardous Materials Management and Emergency Response center
HARC	Houston Area Regional Council
HCCI	Homogeneous Charge Compression Ignition
HCP	Hexagonal close packed
HD	Heavy-duty
HDD	Heavy-duty diesel
HECC	High Efficiency Clean Combustion
HEDGE	High Efficiency Dilute Gasoline Engine
HEI	Health Effects Institute
HEV	Hybrid Electric Vehicle
HFCIT	Hydrogen, Fuel Cells, and Infrastructure Technologies
HICEV	Hydrogen internal combustion electric vehicle
HIL	Hardware in the Loop
HIPOC	Hydrogen Industry Panel on Codes
HOMO	Highest occupied molecular orbital

Acronym	Definition
HSLA	High strength low alloy steel
HSS	High Strength Steel
HTIPE	High temperature integrated power electronics
HTML	High Temperature Materials Laboratory
HTUF	Hybrid Truck Users Forum
IC	Internal Combustion
ICE	Internal Combustion Engine
IEA	International Energy Agency
IGBT	Insulated-gate bipolar transistor
IMEP	Indicated Mean Effective Pressure
INL	Idaho National Laboratory
IP	Intellectual Property
IQT	Ignition Quality Tester
ISO	International Organization for Standardization
JARI	Japan Automobile Research Institute
JPL	Jet Propulsion Laboratory
JRC	Joint Research Centre (European Commission)
KIVA	Internal combustion engine simulation code (Los Alamos)
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory
LCA	Lifecycle cost analysis
LD	Light-duty
LDA	Local density approximation
LDRD	Laboratory Directed Research and Development
LES	Large Eddy Simulation
LFP	Lithium iron phosphate
LIBOB	Lithium bis(oxalato)borate
LM	Lightweight Materials
LNT	Lean NOx Trap
LSAM	Lanthanum-aluminate based oxides
LSP	Laser shock peening
LTC	Low Temperature Combustion
LUMO	Lowest Unoccupied Molecular Orbital
MATT	Mobile Automotive Technology Testbed
MBRC	Miles between road calls
MCMB	Mesocarbon Microbeads
MFERD	Magnesium Front End Research and Development
MIT	Massachusetts Institute of Technology
MOU	Memorandum of Understanding
MPO	Metropolitan planning organization
MSAT	Mobile Source Air Toxics

Acronym	Definition
MSU	Michigan State University
MWNT	Multi-wall nanotube
NASA	National Aeronautics and Space Administration
NASEO	National Association of State Energy Offices
NCA	Battery cathode material (nickel cobalt aluminum oxide)
NDA	Non Disclosure Agreement
NDE	Non-Destructive Evaluation
NDT	Non-Destructive Testing
NEC	National Electrical Code
NEMS	National Energy Modeling System
NETL	National Energy Technology Laboratory
NEV	Neighborhood Electric Vehicle
NFPA	National Fire Protection Association
NHA	National Hydrogen Association
NHFCCSCC	National Hydrogen Fuel Cells Codes and Standards Coordinating Committee
NIST	National Institute of Standards and Technology
NMC	Lithiated nickel-manganese-cobalt oxide
NMR	Nuclear Magnetic Resonance
NPBFL	Non-Petroleum Based Fuels and Lubricants
NPS	National Park Service
NREL	National Renewable Energy Laboratory
NSF	National Science Foundation
NSTA	National Science Teachers Association
NTRC	National Transportation Research Center
NVH	Noise/vibration/harshness
NVO	Negative valve overlap
OBD2	Onboard Diagnostics
OEM	Original Equipment Manufacturer
OMB	Office of Management and Budget
ONAMI	Oregon Nanoscience and Microtechnologies Institute
ORC	Organic Rankine cycle
ORISE	Oak Ridge Institute for Science and Education
ORNL	Oak Ridge National Laboratory
OSC	Oxygen Storage Capacity
PA DEP	Pennsylvania Department of Environmental Protection
PCB	Polychlorinated Biphenyls
PCCI	Premixed Charge Compression Ignition
PEEM	Power Electronics and Electric Machines
PEM	Proton Exchange Membrane
PGM	Precious-group metals
PHEV	Plug-In Hybrid Electric Vehicle

Acronym	Definition
PI	Principal Investigator
PM	Particulate Matter
PMEP	Pumping Mean Effective Pressure
PNGV	Partnership for a New Generation of Vehicles
PSAT	Powertrain Systems Analysis Toolkit
PSU	Pennsylvania State University
PZT	Lead zirconate titanate film
R&D	Research and Development
ROI	Return on Investment
RPS	Renewable Portfolio Standard
RT	Room temperature
RWDC	Real world driving cycles
SAE	Society of Automotive Engineers
SAXS	Small Angle X-ray Scattering
SCAQMD	South Coast Air Quality Management District
SCHFCA	South Carolina Hydrogen and Fuel Cell Alliance
SCR	Selective Catalytic Reduction
SDO	Standards development organization
SECO	Texas State Energy Conservation Office
SEI	Solid electrolyte interface
SEMCOG	Southeast Michigan Council of Governments
SEO	State Energy Office
SMC	Sheet Molding Compound
SOA	State of the art
SOC	State of Charge
SOI	Silicon on insulator
SOI	Start of Injection
SRM	Switched reluctance motor
SUV	Sport Utility Vehicle
SWNT	Single wall nanotube
SWRI	Southwest Research Institute
TAG	Technical Advisory Group
TAP	Temporal Analysis of Products
TARDEC	Tank Automotive Research, Development, and Engineering Center
TBO	Time between overhaul
TE	Thermoelectrics
TEG	Thermoelectric Generator
TIM	Thermal Interface Material
TLVT	Technology Life Verification Testing
TMAC	Test Machine for Automotive Crashworthiness
TPFPB	Tris(pentafluorophenyl) borane

Acronym	Definition
TRL	Technology readiness level
TTC	Technology Transition Corporation
UAB	University of Alabama Birmingham
UC	University of California
UCF	University of Central Florida
UHC	Unburned Hydrocarbons
UL	Underwriters Laboratories
ULSD	Ultra-low sulfur diesel
UND	University of North Dakota
USABC	US Advanced Battery Consortium
USAMP	U.S. Automotive Materials Partnership
USFCC	US Fuel Cell Council
UT	University of Tennessee
UW	University of Wisconsin
VCR	Variable Compression Ratio
VSI	Voltage source inverter
VSS	Vehicle Systems and Simulation activity
VTMS	Vehicle Thermal Management Systems
VTP	Vehicle Technologies Program
VVA	Variable Valve Actuation
W	Watt
WBG	Wide bandgap
WEG	Water Ethylene Glycol
WER	Waste Energy Recovery
WFO	Work-for-others
WHR	Waste Heat Recovery
WTW	Well to wheels
YSZ	Yttria-stabilized zirconia
ZT	Thermoelectrics figure of merit (measure of efficiency)