

WORLD-CHANGING SCIENCE

Ames Laboratory
Creating Materials and Energy Solutions

Adam Schwartz, Director
311 TASF
Ames, IA 50011
director@ameslab.gov
515-294-2770

Visit our website:
www.ameslab.gov

Ames Laboratory is a nationwide leader in understanding, designing and creating new materials to secure our energy future, such as developing better magnetic materials for wind turbines and hybrid cars, and improving catalysts for biofuel production.

Ames Laboratory's science has global impact on our energy security and our environment.

Lead-free solder: Our lead-free alloy of tin-silver-copper has been widely adopted by the electronics industry for use in all types of devices, such as computers and cell phones, removing lead contaminants from the environment.

Biofuel production: A new, cost effective catalyst was designed and developed to enable biodiesel production from a broader spectrum of feedstocks.

Super-slick materials: A ceramic coating made from an alloy of boron-aluminum-magnesium (BAM) can be applied to industrial surfaces to reduce friction and wear.

Next-generation refrigeration: In the future, refrigerators and air conditioners may cool using the magnetocaloric effect of an alloy of gadolinium-silicon-germanium to replace environmentally harmful chemical coolants.

Improved lasers: Ames Laboratory physicists designed and demonstrated the existence of photonic bandgap crystals, making it possible to develop more precise and efficient lasers.

Better analysis: Our pioneering work in inductively coupled plasma mass spectrometry enables rapid and accurate determination of up to 80 elements in metals, alloys, and liquids, and is accurate down to levels of a few parts per trillion.

DNA sequencing: We developed the chemical analysis technique, multiplexed capillary electrophoresis, which revolutionized DNA sequencing and is now a standard DNA analysis tool used worldwide.

