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INL wins three more R&D 100 Awards

IDAHO FALLS — Idaho National Laboratory researchers earned R&D 100 Awards for three of four nominated technologies during the international competition hosted by R&D Magazine. This year's showing repeated INL's 2009 performance.

"This is a very special year for INL," said David Hill, INL deputy director for Science & Technology. "Our talented researchers completed a repeat performance, earning three R&D 100 Awards from four nominated technologies just as they did in 2009. We are very proud of them."

INL won two R&D 100 Awards from the three nominated by INL alone and one by teaming with the Ames National Laboratory at Iowa State University and the National Energy Technology Laboratory (NETL).

Two of the selections reward research in optics for a revolutionary gunsight technology called MicroSight and a green energy technology called Supercritical Solid Catalyst that converts the lowest kinds of waste to the finest biodiesel fuel. The third award was for the collaborative effort called osgBullet, which offers a tool for real-time creation and interaction with multibody dynamics simulations in a 3D graphical environment.

"I want to congratulate all of this year's winners on their awards and to thank them for their work," Energy Secretary Steven Chu said. "The large number of winners from the Department of Energy's national labs every year is a clear sign that our labs are doing some of the most innovative research in the world. This work benefits us all by enhancing America's competitiveness, ensuring our security, providing new energy solutions, and expanding the frontiers of our knowledge. Our national labs are truly national treasures, and it is wonderful to see their work recognized once again."

The three R&D 100 Award-winning technologies and their research teams for 2010 include:
• **INL's Supercritical/Solid Catalyst (SSC)**: Discarded and environmentally unfriendly wastes now can be converted into biodiesel fuels using a chemistry breakthrough called Supercritical/Solid Catalyst or SSC. INL scientists Dan Ginosar, Bob Fox, Lucia Petkovic and Dan Wendt worked to find ways to create liquid fuels from a variety of waste streams, including municipal wastewater and food processing waste. SSC mixes fat or oil feedstock with supercritical fluid solvents and alcohols at specific temperatures and pressures to completely dissolve the materials during a single supercritical phase. This approach overcomes a key barrier — the polar liquid phase in conventional biodiesel production, which requires multiple steps.
• **INL's MicroSight**: INL's MicroSight seems to transcend the laws of physics by simultaneously imaging two distinct focal planes so that a marksman can clearly focus on both the gun sight and the target. INL engineer David Crandall developed MicroSight so hunters, target shooters and military marksmen can clearly see their targets and the sights at the end of their gun barrels simultaneously. This can dramatically improve a shooter's situational awareness with better vision and safety. MicroSight is durable, incredibly small and adds less than 1/1000th of an ounce to the firearm. The MicroSight has been licensed by Apollo Optical Systems of Rochester, N.Y., a world leader in lens design and engineering.
• **osgBullet**: INL researchers David Muth and Joshua Koch collaborated with researchers at Ames National Laboratory and NETL to develop osgBullet, which provides an open-source software toolkit that enables real-time creation and interaction with multibody dynamics simulations in a 3D graphical environment. Ames researcher Douglas McCorkle led the R&D 100 submission team that includes INL and NETL.

"Our energy researchers, led by Dan Ginosar and Bob Fox, have made a major contribution toward America's demanding energy challenge," said J.W. "Bill" Rogers Jr., associate laboratory director for INL's Energy & Environment Directorate. "Dave Muth and Joshua Koch are young researchers who demonstrate that they have bright futures ahead by developing software that delivers special capabilities to dynamic simulation tools used for research."

Two of the three winning research teams work in INL's Energy & Environment Directorate.

"MicroSight adds a tremendous capability to a shooter's situational awareness, delivering better vision, safety and capabilities," said K.P. Ananth, associate laboratory director for INL's National & Homeland Security Directorate.

Research team members will be hosted by R&D Magazine at a November gala dinner and award presentation in Orlando, Fla.

"INL now has accumulated 44 of these international awards since 1986," Hill said. "Since 2005, when Battelle Energy Alliance became the INL operating contractor, we have won 12 awards."

INL is one of the DOE's 10 multiprogram national laboratories. The laboratory performs work in each of DOE's strategic goal areas: energy, national security, science and environment. INL is the nation's leading center for nuclear energy research and development. Day-to-day management and operation of the laboratory is the responsibility of Battelle Energy Alliance.

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