



AMES LABORATORY
United States Department of Energy

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Overview and Opportunities

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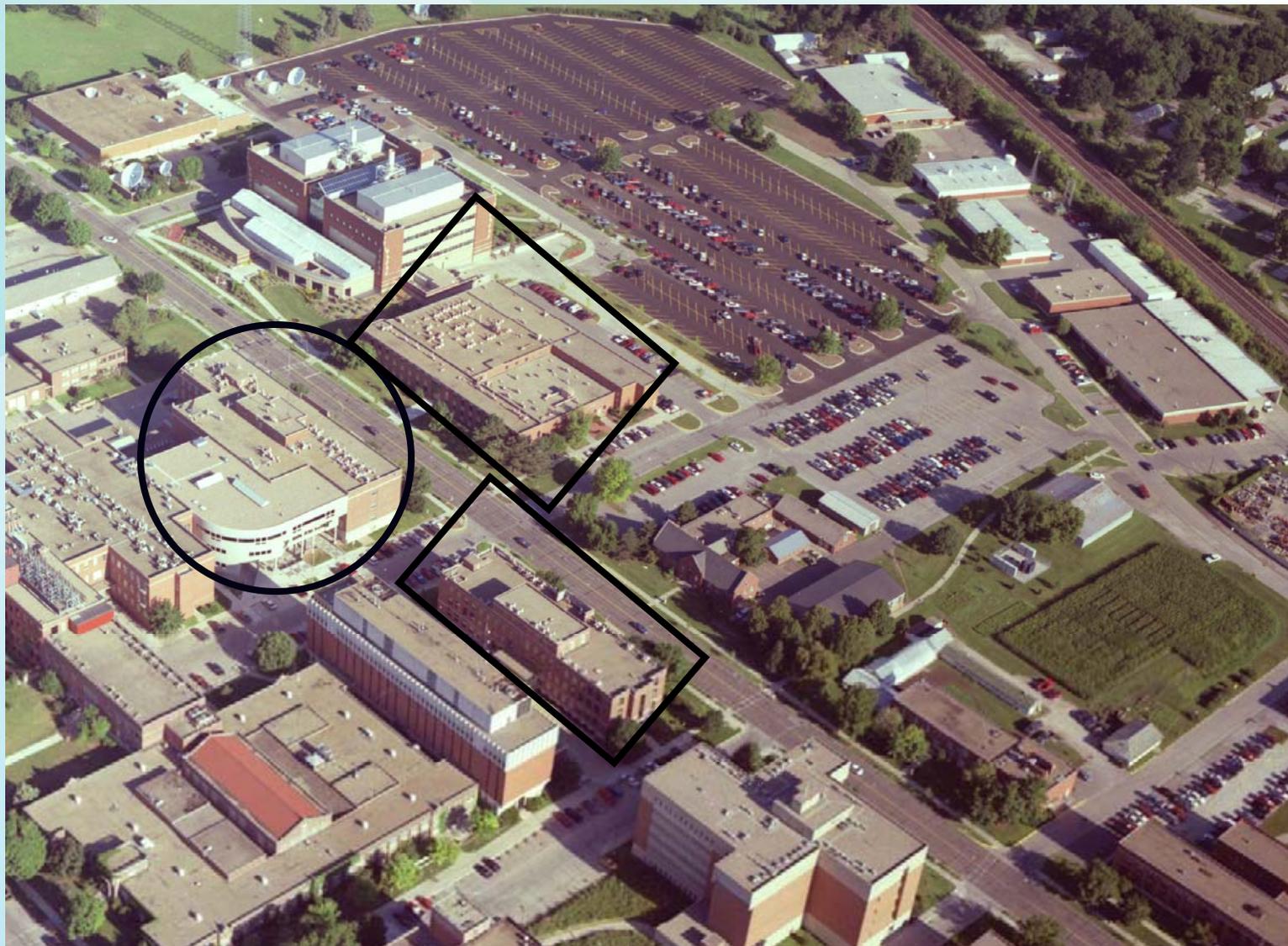


Ames Laboratory at a Glance

Location:	Ames, IA
Type:	Single-program laboratory
Contract Operator:	Iowa State University of Science and Technology (ISU)
Website:	http://www.ameslab.gov/
People:	<ul style="list-style-type: none">• 350 Full-time equivalent employees• 250 ISU grad/undergrad students, student employees, and associates• 200 Facility users, visiting scientists, and associates



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VISION

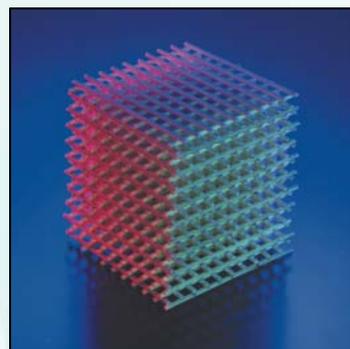
Ames Laboratory will sustain world-leading research in emerging areas of materials science, both within the Lab and in collaboration with others. It will create high-performing interdisciplinary project teams, supported by an array of unique instruments and capabilities, each developed or modified to bring specific capabilities to bear on the research at hand.

Materials Research

- Novel optical materials
- Materials design, preparation & synthesis
- Magnetic materials & correlated electron systems
- Complex intermetallic compounds
- Catalytic materials



Plasma Arc Melting of
a Refractory Metal



Photonic Crystals



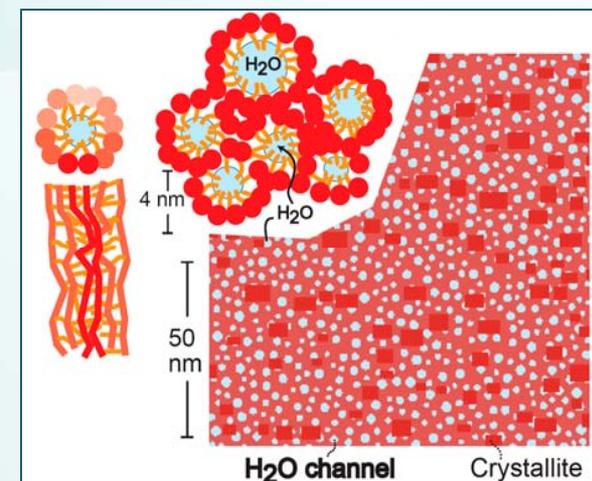
Magnetic Cancer Cells

Facilitated by

- Theory integrated with experiment
- Scalable Computing Lab
- Interdisciplinary teamwork
- Materials Preparation Center

Analytical Techniques & Instrument Development

- Solid-state NMR
- Single-cell analysis
- Single molecule analysis
- Electrochemically modulated liquid chromatography
- Surface enhanced Raman scattering
- Mass spectrometer techniques and instrument design



Solid-state NMR:

Adsorbates on catalysts

Organic-inorganic interfaces in nanocomposites

Nanoscale structures of plant cell walls

Magnetic molecule spin dynamics

Partnership Opportunities

- Condensed matter theory, directed to the invention and utilization of novel materials
- Rare earths.
- Separation science.
- Design and fabrication of analytical instruments and devices.
- Materials characterization using solid state NMR, solid-X-ray and neutron scattering
- Development and application of scalable and effective computational codes.

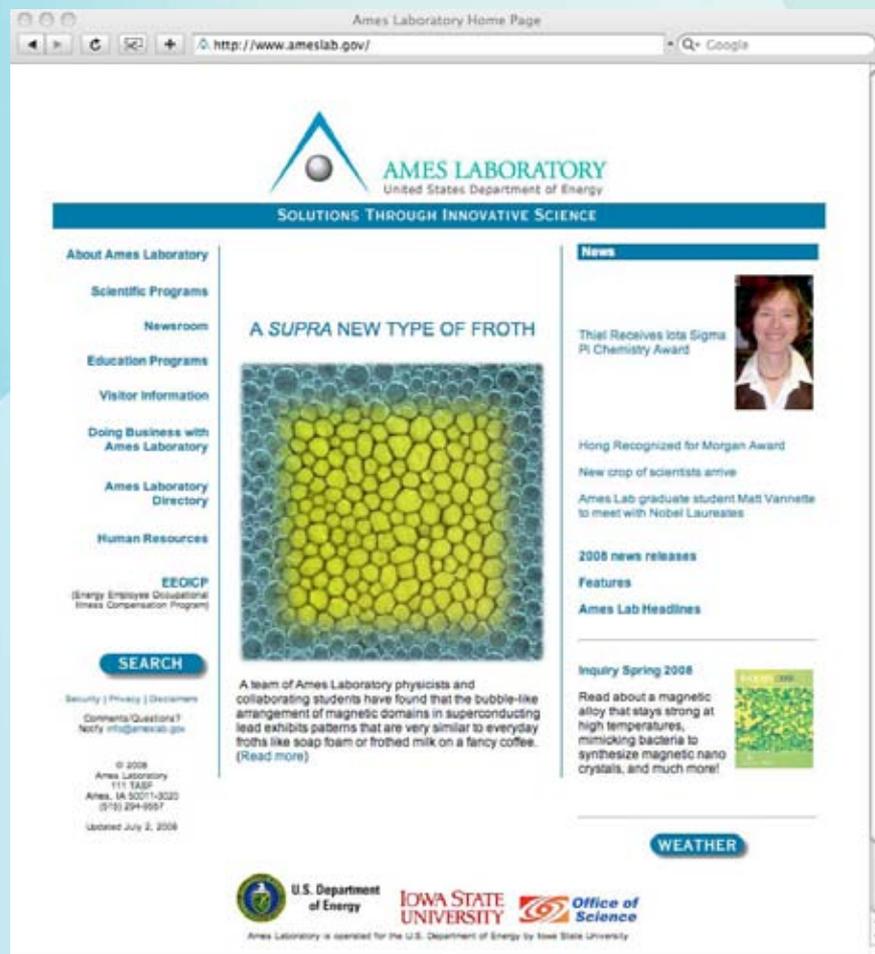


Single crystal of
 $\text{YbT}_2\text{Zn}_{20}$



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Visit our Website



The screenshot shows the Ames Laboratory website homepage. At the top, it says "Ames Laboratory Home Page" and "http://www.ameslab.gov/". The main header features the Ames Laboratory logo and the tagline "SOLUTIONS THROUGH INNOVATIVE SCIENCE". A navigation menu on the left includes links for "About Ames Laboratory", "Scientific Programs", "Newsroom", "Education Programs", "Visitor Information", "Doing Business with Ames Laboratory", "Ames Laboratory Directory", and "Human Resources". The main content area is titled "A SUPRA NEW TYPE OF FROTH" and features a large image of a bubble-like structure. Below the image, a text block reads: "A team of Ames Laboratory physicists and collaborating students have found that the bubble-like arrangement of magnetic domains in superconducting lead exhibits patterns that are very similar to everyday froths like soap foam or frothed milk on a fancy coffee. (Read more)". To the right, a "News" section lists several articles, including "Thiel Receives Iota Sigma Pi Chemistry Award" and "Hong Recognized for Morgan Award". A "SEARCH" box is located at the bottom left, and a "WEATHER" button is at the bottom center. The footer includes logos for the U.S. Department of Energy, Iowa State University, and the Office of Science, along with the text "Ames Laboratory is operated for the U.S. Department of Energy by Iowa State University".

<http://www.ameslab.gov>