Virtual Experiment: Viscosity Explorer

The Viscosity Explorer lets you see how viscosity varies from liquid to liquid and how temperature affects viscosity. You can

• compare two different liquids with each other
• test the same liquid at two different temperatures


Talk about Floating On Air

Check out the world's lightest material: 0.85 mg/cc


'Brinicle' ice finger of death

A bizarre underwater "icicle of death" has been filmed by a BBC crew. With timelapse cameras, specialists recorded salt water being excluded from the sea ice and sinking. The temperature of this sinking brine, which was well below 0°C, caused the water to freeze in an icy sheath around it. Where the so-called "brinicle" met the sea bed, a web of ice formed that froze everything it touched, including sea urchins and starfish.

http://www.bbc.co.uk/nature/15835017

The Properties of Water

http://www.youtube.com/watch?v=Wnx9thXySGw

The “Dance Your Ph.D.” Contest

The dreaded question. “So, what’s your Ph.D. research about?” You take a deep breath and launch into the explanation. People’s eyes begin to glaze over...

At times like these, don’t you wish you could just turn to the nearest computer and show people an online video of your Ph.D. thesis interpreted in dance form?

Now you can. In these short films, doctoral students interpret their research to a dance.

2011 Winners

Physics - Microstructure-Property relationships in Ti2448 components produced by Selective Laser Melting: A Love Story

http://vimeo.com/30299036
Instant Ice Crystals - The Secret Life of Ice

Dr Gabrielle Walker and Dr Andrea Sella investigate the molecular make up of ice crystals. They use supercooled water to create a mass of ice crystals instantly and discover why water expands as it freezes into ice.

http://www.youtube.com/watch?v=3Qasw7Ib2UM&sns=fb

Ice Formations with Daily Freeze/Thaw Cycles

In the middle latitudes and at higher elevations in the lower latitudes, many places experience diurnal freeze/thaw cycles. This can lead to some fantastic ice crystal formations.

This article and pictures are by James R. Carter, Emeritus Professor of Geography-Geology, Illinois State University

http://my.ilstu.edu/~jrcarter/ice/diurnal/

Dissolve My Nobel Prize! Fast!

It's 1940. The Nazis have taken Copenhagen. They are literally marching through the streets, and physicist Niels Bohr has just hours, maybe minutes, to make two Nobel Prize medals disappear.


Science360 News

News from wherever science is happening, including directly from scientists, college and university press offices, popular and peer-reviewed journals, dozens of National Science Foundation science and engineering centers, and funding sources that include government agencies, not-for-profit organizations and private industry.

You can subscribe to a daily email blast for a one-stop shop source of science news.

http://news.science360.gov/files/

Free Science Videos

Over 600 Free Science Videos (Biology, Chemistry, Physics) from Brightstorm Science. Science help with teachers explaining concepts and sample problems.

http://www.brightstorm.com/science/

Finding Your Science

Finding Your Science is a National Science Foundation video series that's all about science passion, perspective, and inspiration.

http://science360.gov/series/Finding+Your+Science/721b999b-1b3f-485a-aa29-4640e66f3fe0

Laminar Flow Video

This one always seems like magic to me. The Reynolds number R is the dimensionless combination:

\[ \rho v R \]
\[ R = \frac{\nu}{\eta} \]

in which \( \rho \) is the density, \( \nu \) the speed of the fluid, \( R \) the size of the flow, and \( \eta \) the viscosity. When \( R \leq 1 \), friction dominates inertia and the fluid flows in layers (laminar flow).

Here we are using corn syrup which has a viscosity of 5 (Pa s); its viscosity is 5000 times that of water, and the Reynolds number \( R \) is less than unity.