

Name: _____ Date: _____ Class: _____

Aerogel Video List and Teacher Notes:

Emulsion

- Straightforward and clear info on emulsions and everyday examples are provided. https://www.youtube.com/watch?v=bC_czAL24zY

One Means of Aerogel Synthesis

- **Agnello Polyimide Aerogels -- Weight Savers for Aircraft Antennae.** A good summary of the work being done at NASA. Highlights the work of a young female engineer. <https://www.youtube.com/watch?v=DgkogPXG134>

Videos that highlight a specific property of Aerogels

Thermal Insulative:

- **Penn and Teller Tell a Lie: Aerogel Vs Flame Thrower.** Comical Penn and Teller video showing thermal insulative property. <https://www.youtube.com/watch?v=MCVw9PSDQRw&feature=youtu.be>
- Aerogels used in sheets for various shown and suggested uses including clothing, insoles, etc from a commercial company. Dry ice is used in this video. <https://www.youtube.com/watch?v=HITcncWOJ4>
- Aerogels used in coats--Video in the middle of the Kickstarter page; best if shown just before or just after a liquid nitrogen demo. https://www.kickstarter.com/projects/1338531979/lukla-endeavour-outerwear-for-the-21st-century-adv?ref=category_location

Hydrophobicity:

- Aerogel Powder—Superhydrophobic “Never Wet” Coating. <https://www.youtube.com/watch?v=sSUuUwS5rsU>
- **Hydrophobic Aerogel Makes Hands Waterproof.** Chemistry structure explained. <https://www.youtube.com/watch?v=12QJKET1Dq8>
- Airloys--Improved Aerogels. <https://www.youtube.com/watch?v=k8OhJKR3AA4>

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Overview of Properties

- **Quest Lab: Aerogel KQED Quest.** Dust Collection on space satellite shown. Good to segue into clothing filtration goal.
<https://www.youtube.com/watch?v=kHnen2nSmDY>
- **Why Airloys and Aerogels are the Next Supermaterial.** A good summary including the problem of cost of production.
<https://www.youtube.com/watch?v=ZY5qy1glF1s>
- **Advanced Materials by Green Earth Aerogel Technologies.** Environmentally friendly aerogel; properties shown but not uses; good showing of fireproofing.
<https://www.youtube.com/watch?v=4k91URjFNgY>

The Aerogel Synthesis Process

- **How It's Made—1336 Aerogel.** A thorough summary.
<https://www.youtube.com/watch?v=AlohrrK6u4k>