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‘We Deliver Clean Air’

Show Me The Hydrogen

The Essential Element (being water) in Merztown, PA, manufactures the HYDRA, a mobile solar hydrogen, water purification and electricity generating station. Solar panels power an electrolyzer, a pump for water filtering and a battery charger. Hydrogen runs a cookstove and a fuel cell. 110 & 230 VAC and 12 VDC are available for lights, electronics or refrigeration. [www.theessentialelement.com](http://www.theessentialelement.com) See also Spectra Watermakers’ Solar Cube. [www.spectrawatermakers.com/solarcube](http://www.spectrawatermakers.com/solarcube)

“Quotations”

“Nobody has to die for solar energy.” (Paul Wilkins)

“We…must avoid the impulse to live only for today, plundering, for our own ease and convenience, the precious resources of tomorrow. We cannot mortgage the material assets of our grandchildren without risking also the loss of their political and spiritual heritage. We want democracy to survive for all generations, not to become the insolvent phantom of tomorrow.” (Farewell speech of President Dwight D. Eisenhower, January 1961)
Editorial

Someone asked Saudi Arabian oil minister Ali al-Naimi if people would stand for $100 a barrel oil. His answer was, “What else do you have?” Well, sir, I’m glad you asked. We’ve got syngas, hydrogen, methane hydrates and moonshine, all courtesy of the sun.

I recently discovered a cache of the Journal of Solar Science and Engineering. There are hundreds of technical articles on solar refrigeration, solar tracking, solar cells, solar cooking, solar hot water, solar furnaces and solar distillation— all starting from 1957. It was published here in Phoenix. How many of you recognize the name Maria Telkes, one of the authors. She ran MIT’s solar energy lab in 1939. During WWII, she designed solar stills for Navy life rafts. She passed away in 1995 at the age of 95. Who’s going to fill the shoes of all these pioneers? Who’s going to study and experiment, think and write technical articles? You and me.

If you have trouble like I do remembering which electrolyzer electrode is which, try Positive = Oxygen.

Hydrogen on the Internet

Subscribe to (or renew) Homepower magazine for $10 when their Facebook page hits 2000 likes. The offer is only good for 48 hours. Currently at 1990. www.facebook.com/homepower

Get a science kit from Kelvin Educational for making your own MAGLEV train. Or wind tunnel or earthquake tester or biodiesel fuel. www.kelvin.com

If you’d rather build a 225 MPG diesel hybrid vehicle, then Robert Q. Riley Enterprises is the place. Plans for alternative cars, boats, bicycles and a jet engine. Valuable information on working with composites and how to register your homebuilt for legal street use. www.rqriley.com

Greenfire Energy, based in Salt Lake City, is developing a geothermal electric plant near Springerville, Arizona that doesn’t use water. The working fluid is super critical CO2, some of which will be trapped in the rock. www.greenfireenergy.com
The SCORE low-cost biomass cookstove, a project of Los Alamos National Lab and several U.K. universities, also generates electricity with sound waves. www.score.uk.com/research

Subscribe to Biofuels Digest for a free daily dose of new technology. Find out about lawnmowers overheating on higher ethanol gasoline. www.biofuelsdigest.com

A free weekly newsletter from Biodiesel magazine covers research, manufacturers, producers, government antics and events. Lots on algae. Find out what’s going on in your own backyard that you don’t even know about. www.biodieselmagazine.com

Hydrogen Events


The Phoenix American Hydrogen Association now meets the second Thursday of every month from 6 to 8pm at Denny’s restaurant, 650 N. Scottsdale Rd. in Tempe, AZ (SW Scottsdale Rd/202, one mile north of ASU light rail station). Call 480-964-0458 or 480-229-0828 for details.

Books & Publications


Goldstein, director of the National Resources Defense Council’s energy program, does a middling job of convincing us that the cost of environmental quality does not have to hurt businesses & consumers or restrict our freedom of choice. He gives examples of how small investments can keep big cash in your pocket. A skyscraper remained lit all night because no one knew where the light switches were. LED traffic lights rapidly pay for themselves in saved electricity and maintenance, besides the additional benefit of working on batteries when utility power fails. How does a 50% return on home insulation sound? Smart communities are being designed that are cheaper and far more livable where buyers demand it. He also bashes the free market as the only economic arbiter. When California enacted energy standards for refrigerators in 1975, manufacturers complained they’d be put out of business. Nobody would buy a more expensive appliance, even if it did save $2000 worth of electricity. Companies proceeded to build refrigerators that were 4 times more energy efficient, 20% larger and 50% cheaper. The powers that be often stifle innovation and risk-taking. He implies it won’t be Detroit or Congress that builds a 100 MPG car. He sees a great future for process engineers whose innovation can save resources. A solar oven in your backyard doesn’t really mean you’re a communist. Unfortunately, the author writes in lawyerese. It’s hard work getting the jewels out of the hardrock.
On March 26th, the AHA took a field trip to a poured-earth home under construction by architect Michael Frerking. Poured-earth is not quite as simple as throwing shovelfuls of your backyard into a cement mixer. Frerking uses a well-proven blend of soil, binder and cement as well as sturdy aluminum forms to assure success. The 12 inch thick walls are unfinished inside to minimize maintenance, although tints can be added for interest as seen in the photo above. The exterior is covered with 4 inches of insulation. The home will use only one eighth the energy of a house built to code. Metal reflectors placed below clerestory windows will spread diffused, comforting daylight throughout every room. By acting as both architect and contractor, Frerking can reduce the homes’ price by about 20%. He is preparing a poured-earth technology course. www.michaelfrerking.com

Thanks
Bruce- Fixing solar Stirling and SCORE stove article.
Ken W- Projector screen and stand.
Michael- Poured-earth tour, Ben for driving and MaryLou for the Frosties.
Mike M-Fabulous Facts and lemons.
DK- Historical AHA documents.
Ken V, Gus, Shane- M920, turbine case.
Roy- M920, Green Diamonds.
Claude- barrels, moving Alvey.
ELECTROLYZERS

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Eagle-Research, Inc.
1306 Main Street
Oroville, WA 98844
250-492-7400
www.eagle-research.com
Publishes Brown’s Gas Book 1 and 2 ($14 & $24). Build an electrolyzer and discover for yourself the weird nature of monatomic hydrogen. Note well- Brown’s gas is an explosive mix of H2 and O2, for direct immediate use in engines and welding torches.

Hydrocap
975 NW 95th St.
Miami, FL 33150
305-696-2504
The Hydrocap is a small catalytic recombinder that replaces normal 12 volt car battery caps. They may have some use in removing O2 from your H2 supply. About $5.50 each.
This is Walter Pyle. Author of Solar Hydrogen Chronicles ($30); Double-Bubbler scrubs residual caustic from electrolyzer output ($455, plans $25); purification filter with coalescing filters, flashback arresters & catalytic H2/O2 recombiner ($2323, plans $25 + $3 shipping).

HySolGenics, Inc.
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www.hysolgenics.com
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Hydrogen Wind Inc.
31086 Timberlost Rd.
Lineville, Iowa 50147
641-876-5665
www.hydrogenwindinc.com
This is L. Spicer. Economical electrolyzers for $250 per unit. Send $1.00 for their brochure. Publishes the Hydrogen Files, 50 pages of miscellaneous notes on electrolyzer design ($30).

Hydrogenics Corp. (former Stuart Energy Systems)
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905-361-3660
www.hydrogenics.com
HySTAT electrolyzers and fuel cells.

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http://www.electrolysers.com
Electrolyzers and H2 fuel stations from Norway. 10-500 cubic meter/hr.

www.goodideacreative.com/wheelockmtn.html
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Thermodyne Systems
4083 West Ave. "L", #107
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www.hydrogenappliances.com
Used to sell smaller electrolyzers, but now lists 700 l/min for $325,000. Also hydrogen detectors, 12V water heater elements and wind turbines for good measure.

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KTA Services
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Alcohol Can Be A Gas—David Blume (2007) 596 pages. Complete coverage from growing your stock, building equipment and converting your car to ethanol.  www.alcoholcanbeagas.com

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Gasifier Experimenters Kit(GEK). Convert your junk mail into fuel or biochar. Plans, parts, forum and seminars.

ALGAE

Making Algae Biodiesel At Home—David Seig (2008). A $100 ebook that will get you started if you don’t have time to search the Internet.  http://www.making-biodiesel-books.com/algae-biodiesel.html

Home algae production forum, mentions strains for hydrogen.

BIODIESEL

From the Fryer to the Fuel Tank- Joshua Tickell (2003) 162 pages. Read either one of these books.

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WIND

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Wind Power: Renewable Energy for Home, Farm and Business- Paul Gipe (2004), 504 pages. The one book you’ll need if you’re serious about wind power.


Windworks 30 Foot Octahedron Tower. Old plans for Buckminster Fuller tower built out of EMT. Available for $15 from Don Gardner. Contact lodoga@yahoo.com Lost dimension is 9½ inches.

PUBLICATIONS

Lindsay Publications Inc.
P.O. Box 538
Bradley, IL 60915
815-935-5353
www.lindsaybks.com
Catalog is mostly reprints of old technical books, but plenty of titles on alternate energy, home machining and weird DIY stuff.

BOOKS


Propane Fuel Conversions—Jay Storer (1986). Superb book, but hard to find these days.


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damaged by California air pollution.  He sponsored hydrogen powered
vehicles in the ’70s.  Although Dr. Zweig died in 2002, Clean Air Now
is still building hydrogen vehicles in collaboration with UC Riverside
CERT.

International Clearinghouse for Hydrogen Commerce
www.hydrogencommerce.com
Huge site of material on hydrogen vs. Big Oil/Washington.

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Schatz Energy Research Center (SERC)
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P3 International
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Kill-A-Watt electrical energy monitor.

SOLAR FURNACES

http://www.ida.net/users/tetonsl/solar/solarhom.htm
Tracking concentrator using mirrors.

Mother Earth News
www.motherearthnews.com
Four project articles, uses 100 mirrors- #52(Jul/Aug ’78), #55(Jan/Feb ’79), #56(Mar/Apr ’79) and #57(May/Jun ’79).
HYDROGEN SAFETY


www.h2bestpractices.org

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www.timeanddate.com
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www.unitjuggler.com
Units conversion program.

Don Lancaster’s Hydrogen Library
www.tinaja.com/h2gas01.asp
Also read his “Incredible Secret Money Machine” about starting your own
    craft/tech business.

Renewable Energy Access
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