

# Hydrogen Today



## Show Me the Hydrogen



### AHA Solar Hydrogen House

From February 15<sup>th</sup> to March 23<sup>rd</sup>, AHA members presented our solar hydrogen house at the MicroDwell 2014 exhibition at Phoenix's Shemer Art Center. Over a dozen entries proved you can live inexpensively and comfortably in less than 600 square feet. Every weekend there were about 2000 visitors who learned how Arizona sunshine can be stored as hydrogen. It was a pleasure to hear all the positive comments. Visitors also told us stories about their hydrogen experiments and research from years ago. The star of our display was the Horizon 500 Watt fuel cell. After being told that fuel cells are years away, people were impressed to see and touch one. One phrase we heard over and over was "off the grid." There is a market for a safe, practical and affordable solar hydrogen energy system.  
(continued on page 2...)

### "Quotations"

"Live as if you were to die tomorrow. Learn as if you were to live forever." Gandhi

"An old error is always more popular than a new truth." German proverb

### Inside H2 Today

1. Show Me the Hydrogen, Quotes for Bad Days
2. AHA Mission
4. Editorial
6. H2 Events
7. Thanks, Books & Publications
9. Membership

*'We Deliver Clean Air'*

Hydrogen Today:  
Journal of the American  
Hydrogen Association  
P.O. Box 4205  
Mesa, AZ 85211 USA  
480-234-5070  
[www.clean-air.org](http://www.clean-air.org)

#### AHA Board

Roy McAlister, Pres.  
Ben Ferguson. V.P.  
Douglas Hawley, Sect./Treas.  
Claude Culbertson  
Jon Findley  
Wm. Garrett  
John Gotthold  
Rick Lagno  
Russell Philips

#### Advisory Board

Abe Fouhy  
Michael Frerking  
Marcia Greenshields  
Cathy Leyen  
Eric Szewczyk  
Ken Wilson

Editor- Hydrogen Today  
Douglas Hawley  
[bikesintl@netzero.com](mailto:bikesintl@netzero.com)

#### AHA Chapters

AHA Northwest  
[www.ahanw.org](http://www.ahanw.org)  
Portland, OR

AHA Silicon Valley  
[www.ahasvc.org](http://www.ahasvc.org)  
Palo Alto, CA

ISSN: 1081-1273

\*\* SAFETY FIRST \*\*

## American Hydrogen Association Mission

Develop and prove solar hydrogen technologies that will eliminate economic, environmental and energy hardships caused by burning one million years accumulation of fossil fuels every year *and*

Educate scientists, entrepreneurs and experimenters, parents and educators, CEO's, legislators, utilities, the media and farmers how to use solar hydrogen to create sustainable prosperity without pollution.

### AHA Solar Hydrogen House (cont...)

The hydrogen house will continue to be used as a public demonstration, laboratory and guest quarters. Still to be added are insulation, a bathroom and a hydrogen absorption refrigerator. We're preparing a building code manual that will cover both tiny houses and hydrogen installations.

### Solar Hydrogen House Details:

Cost- about \$6000, using lots of recycled material  
Size- 7ft. x 12 ft. (84 Square feet) mounted on 7 ft. x 16 ft. trailer. The house was built on a trailer in driveway to save commuting to the site every day.

Construction- 2x4 framing, plywood

Construction time- 6 weeks

PV- (4) 20 year old 120 Watt panels

Lighting- all LED

Kitchen- gas stove, tankless gas water heater, sink

Electrolyzer- Hydrogen Wind

Double Bubbler- built from Walt Pyle's H-Ion Solar plans

H2 purification system- built from Walt Pyle's '98 Home

Power magazine article (issue #67).

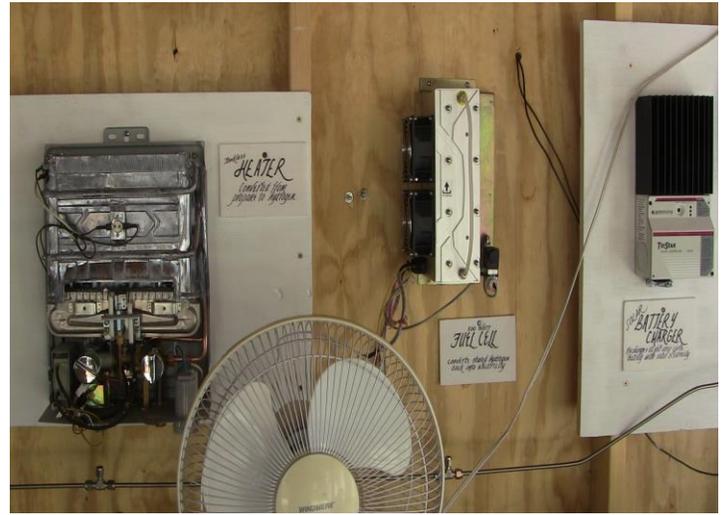
Fuel cell- Horizon FCS-500, 500 Watt, 12V @ 35 amps output, uses 6.5 liters H2/minute maximum, 99.995% purity



Claude & Clyde finish the base on trailer



8' wall framing.



H2 water heater and fuel cell



Solar panels, electrolyzer & Bubbler in place



H2 stove



PV electronics and H2 purification system



Arizona Highways TV interviews Clyde and Pat

## Editorial

After years of work, the AHA recently passed three very big milestones. The MicroDwell 2014 hydrogen house in the cover story introduced solar hydrogen to 10,000 more citizens. Our <http://clean-air.org/> website, running since 1994, is one of the oldest on the Internet. In February, we launched an all new version. We aren't finished with the site yet. We're working on teacher's resource pages and this year we'll add a comprehensive hydrogen safety section. Let us know if you can help with either of those.

On March 1<sup>st</sup>, we started moving into a new Headquarters in Mesa. It has offices, a lab, common room, library, workshop, shaded work pad and a large parking area. After being homeless for several years, members and friends can once again enjoy the basic human need to learn and create. We're still moving so haven't established operating hours yet. If you're on the Internet, you'll be able to participate with us wherever you are in the country. Sign up for free Skype.

The AHA was offered six new bus-size carbon fiber compressed hydrogen storage tanks for free if we could move them in 24 hours. We did.

It's now easy to join and support the American Hydrogen Association on our website with PayPal whether you're a PayPal member or not. ( <http://clean-air.org/store.html> ). To me, it's a bargain. For example, I just read a hydrogen safety book from the AHA library that would have cost me \$150 to buy.

See you at Earth Day Texas.



AHA HQ in Mesa, Arizona



AHA HQ Lab Bench



AHA HQ Library



AHA HQ Covered Working Pad

## Hydrogen Events

The Phoenix American Hydrogen Association meets the second Thursday of every month from 6 to 8 PM at Denny's Restaurant, 650 N. Scottsdale Rd. in Tempe, AZ (SW Scottsdale Rd/202, one mile north of ASU light rail station). Call 480-234-5070.

The Silicon Valley AHA chapter meets every third Saturday at the Peninsula Conservation Center, 3921 East Bayshore Road, Palo Alto, CA from 10am to noon. Meetings are now online. Contact Pres. John Gotthold at 408-245-6065 or [jgotthold@comcast.net](mailto:jgotthold@comcast.net) He'll need your email to send you the link before the meetings. Their website is [www.ahasvc.org](http://www.ahasvc.org)

Sustainability Day, Glendale Community College, 6000 W. Olive, Glendale, AZ, Friday, April 18, 8:30 – 1:30. Meet the people who do sustainability for a living.

Earth Day Texas, Saturday and Sunday, April 26-27, Dallas, TX, Fair Park. 10 AM to 6 PM. Free admission. This will be a Texas size event with over 300 green exhibitors and 50,000 visitors. <http://earthdaytx.org/>

Alternative Energy Expo, 11-13 December, 2014, Las Vegas. <http://www.alternativeenergyexpos.com/#>

## Thanks

Thomas Dickerman (1935-2013) Engineer, environmentalist, author and musician.

### MicroDwell 2014

MicroDwell organizer- Pat

Design- Ben, Jim, John G., Doug

Deliver trailer- Rick

Builders- Claude, Clyde, Saul, Warren, Jon, John & William, Dave

15 trips to Home Depot- Clyde

Solar panels- Claude

Move hydrogen house- Dave

Tours- Claude, Clyde, MaryLou, Ben, Jon, Ann, Shields, John N., Doug

Photos- Clyde, Kaz

### AHA Headquarters

Roy- loan Dodge pickup

Claude & Bill- deliver Dodge pickup

Claude- bench vise

Jon- desk

Dave-strong back

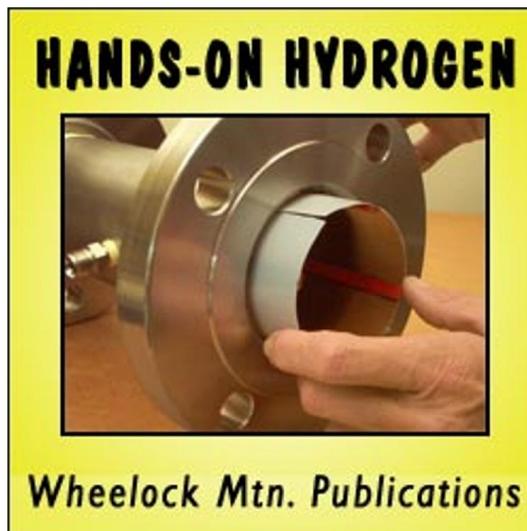
## Books & Publications

Water-Gas Electrolysis Gasoline Fuel Supplement – Fact or Myth?, Larry Killion, P.E., J.D., 2008  
CreateSpace Independent Publishing Platform, \$85, 488 pages

This book is subtitled “On Board Electrolysis: The “More Honest Argument.” The author has degrees in chemical engineering and law. He tested two different systems on a 1998 Jeep Sahara over three years. One unit was a homemade hydrogen generator producing about 30 cc per minute and the other was a commercial unit from Mileage Shop producing 1800 cc per minute. He did no special tinkering with any sensors or ignition.

In his Executive Summary, Killion says “There are no confirmed efficiency gains in respect of mile per gallon fuel consumption.” He continues on with 30 chapters on camshafts, moles, Coulomb’s Law, viscosity, etc. You may learn something from that, but it reads more like a blog than scientific research. There are irritating fragments, misplaced punctuation, random Capitalizations and missing articles. Topics like transistor doping, hydrogen bonding in DNA sound like book learnin’ and leave you wondering what they have to do with on-board hydrogen. Finally after three dozen watts to temperature graphs, on page 32-17 there is a chart showing miles per gallon with and without hydrogen. The sample data shows barely one mpg difference.

For \$85, you can build your own HHO electrolyzer and see how it works for yourself.



*Ebooks for Do-It-Yourself Experimenters*

*By Phillip Hurley*

- Build Your Own Fuel Cells....\$14.95
- Build A Solar Hydrogen Fuel Cell System....\$16.95
- Practical Hydrogen Systems: An Experimenter's Guide....\$16.95
- Build Your Own Solar Panel....\$12.95
- Solar II....\$12.95
- Solar Hydrogen Chronicles....\$12.95
- Solar Supercapacitor Applications....\$16.95
- The Battery Builder's Guide....\$16.95

<http://www.goodideacreative.com/wheelockmtn.html>

*Accepts PayPal*

Good Idea Creative Services  
324 Minister Hill Rd.  
Wheelock, VT 05851

## AHA Membership Form

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Telephone \_\_\_\_\_ email \_\_\_\_\_

- Regular Membership- \$39.00/year (New members receive a free copy of Roy McAlister's "Solar Hydrogen Civilization").
- Student, Military & Senior (60 and over) Membership- \$25.00/year
- Sustaining Membership- \$100.00/year (autographed book and H2 bookmark)
- Life Membership- \$1000
- Corporation/Institutional Membership- \$1000/year
- "Solar Hydrogen Civilization" book only - \$24.95 postpaid.
- Email *Hydrogen Today* only
- Send AHA New Chapter Packet
- "Hilda Hydro - Girls Go Green" - \$8.95 postpaid

Mail to: American Hydrogen Association  
P.O. Box 4205  
Mesa, AZ 85211  
USA

Or go to: <http://clean-air.org/store.html>

Join the AHA and use our services to learn how every community can achieve sustainable  
*Prosperity Without Pollution.*

AHA publishes *Hydrogen Today* to help educate the public about new developments in renewable energy and the science and people behind them. Join us in making a better world. You can help too by writing for *Hydrogen Today*. Tell others about your grassroots alternative energy projects, either scientific or social. Review a book, product, service or event. A picture is still worth a thousand words. The range should be approximately 300-1000 words. Send to the above address or to the *Hydrogen Today* editor at [editor@clean-air.org](mailto:editor@clean-air.org)