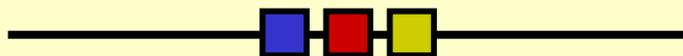
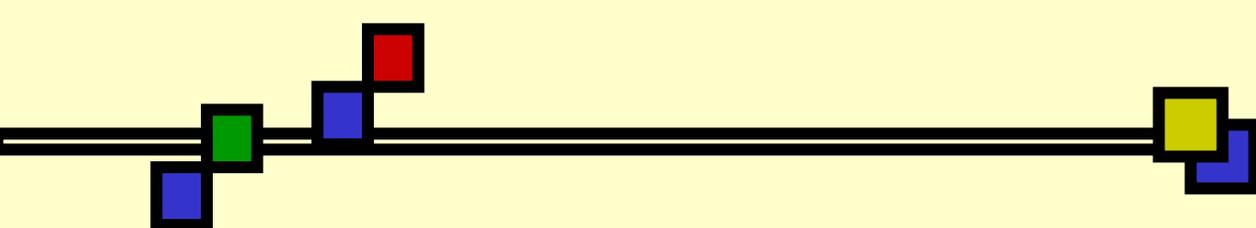


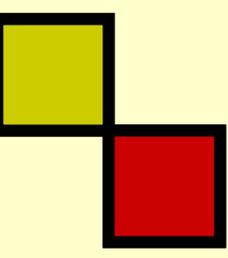
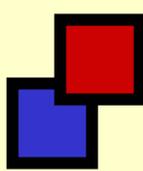
# Training Modules for Hydrogen Safety

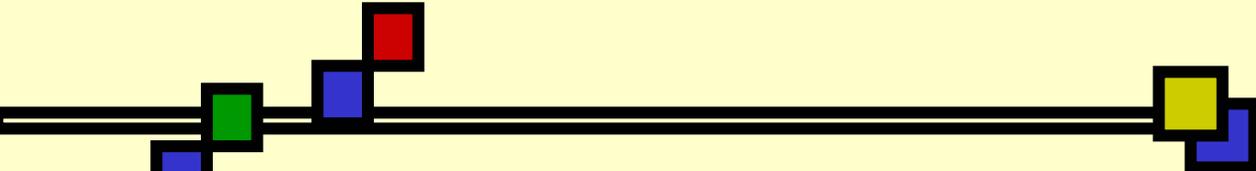


George Kervitsky, Jr.  
SENTECH, Inc.

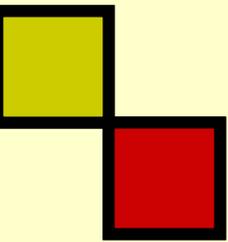


# Outline

- 
- Hydrogen Economy Information Dissemination Matrix
  - Training Module Development
  - Synergies
- 



# Unofficial Hydrogen Economy Information Dissemination Matrix

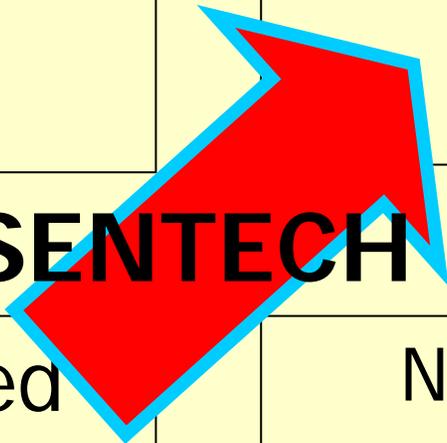


True Believers  
*Visionaries*

Under Informed

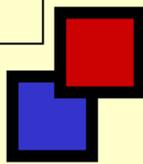
**Choir**

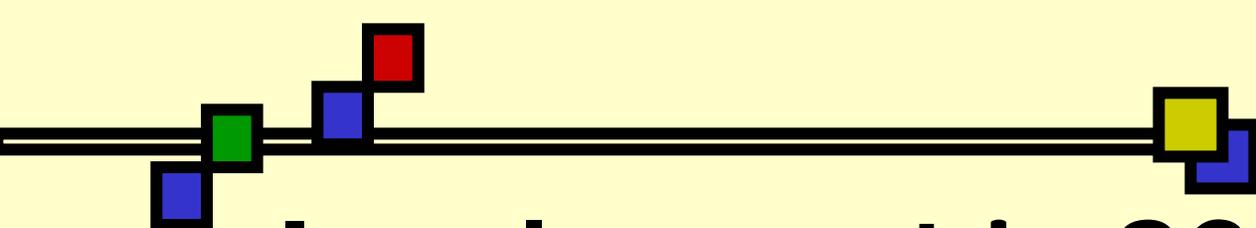
**SENTECH**



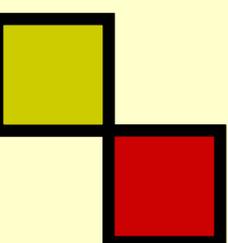
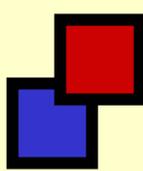
Very Informed  
*Brain Trust*  
Know the potential and challenges

Non Believers  
*Visionaries w/  
other agendas*





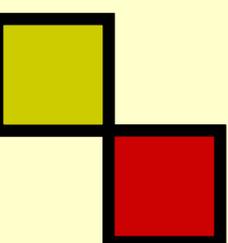
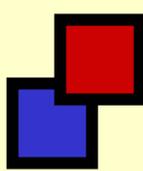
# Involvement in SCS Activities

- 
- Facilitated a number of meetings between DOE and SDOs.
  - Serve as the Secretariat for the C&STT, which is the industry and government collaborative panel responsible for coordinating C&S activities for the FreedomCAR and Fuel Partnership.
  - Participated on the team that crafted the MYPP SCS Sections.
  - Assisted Al Vasys in the development of a multi-media presentation for use in outreach to Code Officials.
- 



# Training Modules

## Contractual Details

- 
- Cooperative Agreement between SENTECH and DOE-GFO.
  - SENTECH is in the 2<sup>nd</sup> year of a 3 year Technical Analysis award, includes:
    - Technical Brochures
    - Technical Information Content and Dissemination
    - Industry Meetings
  - NFPA is participating by providing cost-share to the project and technical and training expertise to develop the training modules.
- 

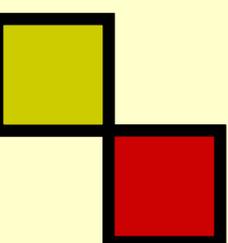
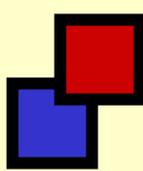


# SENTECH, INC.

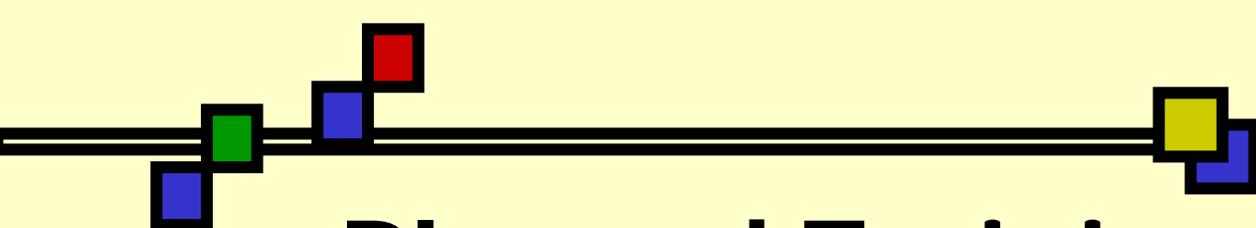
- Energy & Environmental Consulting Firm
- Founded in the early 1990s by Dr. Rajat Sen
- Provides full range of consulting services, with specialization in the area of Hydrogen and Fuel Cells
- 35 Employees
- [www.sentech.org](http://www.sentech.org)



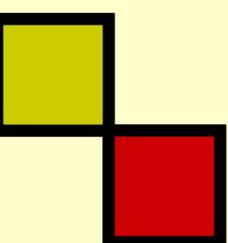
# National Fire Protection Association

- 
- Non-profit association founded in 1896
  - Provides full range of fire safety programs
  - Develops codes & standards - volunteer based
  - 68,000 Members & 300+ Staff
  - 220+ Committees
  - 300+ Codes & Standards
  - [www.nfpa.org](http://www.nfpa.org)
- 

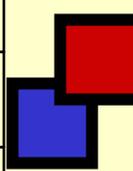


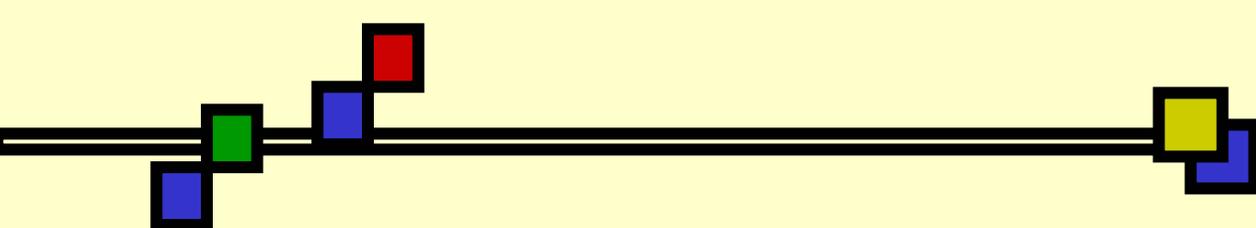


# Planned Training Modules

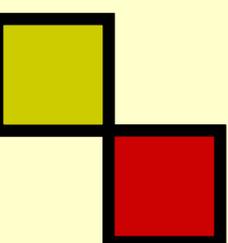


Module 1	Properties and applications of hydrogen
Module 2	Regulations, codes, and standards
Module 3	Storage and piping
Module 4	Dispensing/transfer operations
Module 5	Emergency response procedures
Module 6	Hazard Analysis Procedures (failure modes and effects analysis)

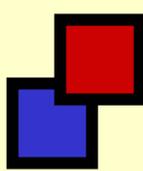




# Planned Modules (Continued)

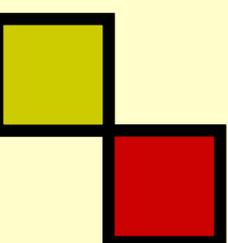
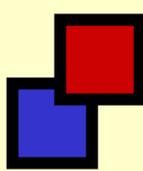


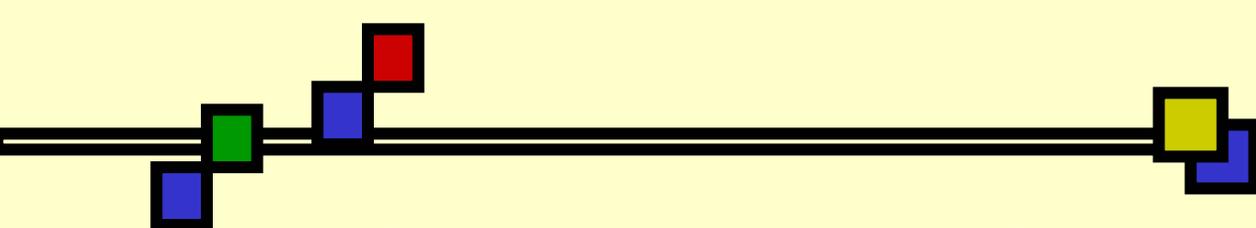
Module 7	Personnel training for installation and operations (including emergency response training, operating procedures, training intervals, and certification)
Module 8	Facility inspection for enforcement officials
Module 9	Facility siting example
Module 10	Emergency response example
Module 11	Operations history (overview of existing facilities and their safety record)





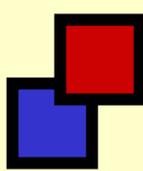
# Use of the Training Modules

- Intended for contract or continuing education seminars
  - Includes comprehensive slide presentation and companion CD-ROM
  - Provides interactive educational experience, mixing lecture & problem solving activities
  - Provides general knowledge and reference info
  - Offers opportunity for Group and Peer Learning
  - Provides key points clearly – additional details in the Code
- 
- 



# Synergistic Opportunities

Modules could be included as part of other DOE supported activities, including:

- the National System Standards Network, a web-based portal for SCS information managed by ANSI.
  - the DOE sponsored education efforts such as the “Roadshow”.
  - Inclusion in the fire training activities planned for the PNNL HAMMER facility.
  - Others, NASEO?
- 

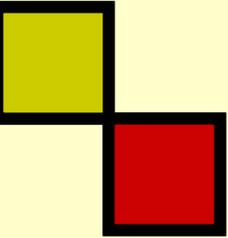


# Other Synergies

- We are routinely familiar in preparing content for various target audiences and can work with researchers and R&D management to tailor information to various audiences.
- We have solid expertise in the development of multimedia presentations that can be used as stand-alone kiosks or distributed as CD-ROMS.
- We have a wealth of various other analytical and problem-solving capabilities that can be used to facilitate dissemination of technical information.



# More Information



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