

# KENAPA PENELITIAN PATEN PERLU??

Ir. Achmad Fauzan Hs MT



- ❑ Blue Energy , Joko Suprpto dari Jawa Timur dan "Banyugeni" yang dikembangkan Universitas Muhammadiyah Yogyakarta (UMY).
- ❑ Meneg Ristek Kusmayanto Kadiman : bahan bakar air mungkin benar bila diminum orang yang kehausan dan memulihkan tenaga untuk kemudian mendorong mobil hingga bergerak. (*Robert Manurung Pengajar Sekolah Ilmu dan Teknologi Hayati Institut Teknologi Bandung*)
- ❑ Joko Sutrisno (50) Yogyakarta. Penghemat 40-50% BBM . Dg Hydrogen Elektrolisa. (SUARA PEMBARUAN DAILY, *Last modified: 29/5/0*)

## ENERGI ALTERNATIF

**Bahan Bakar Air  
dari Yogyakarta**

►► "Empat varian *banyugeni* itu telah memenuhi standar mutu Dirjen Migas, Departemen Energi dan Sumber Daya Mineral."

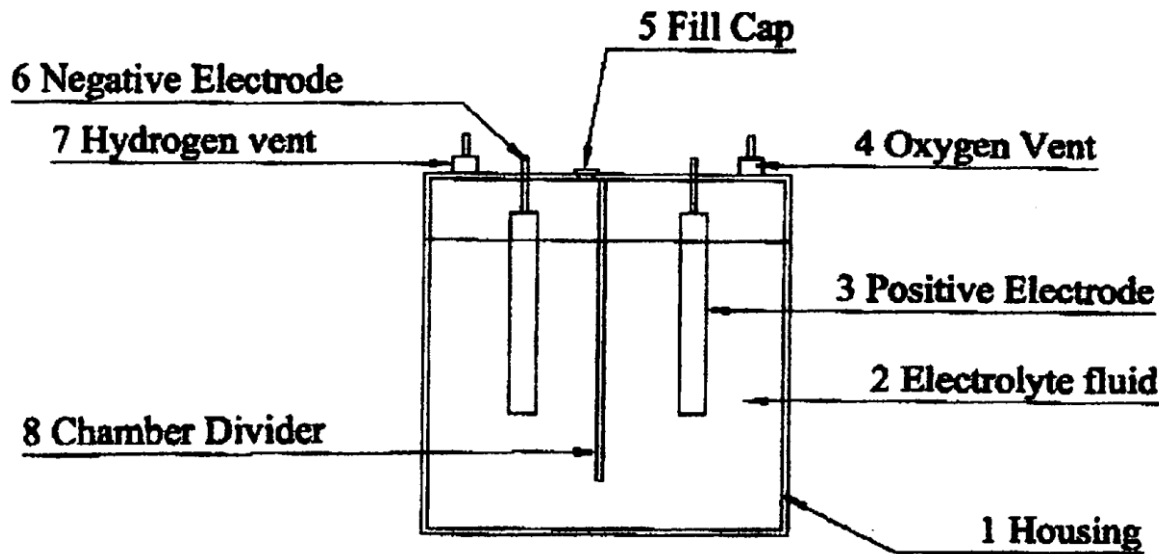
**Purwanto - Tim peneliti UMY**



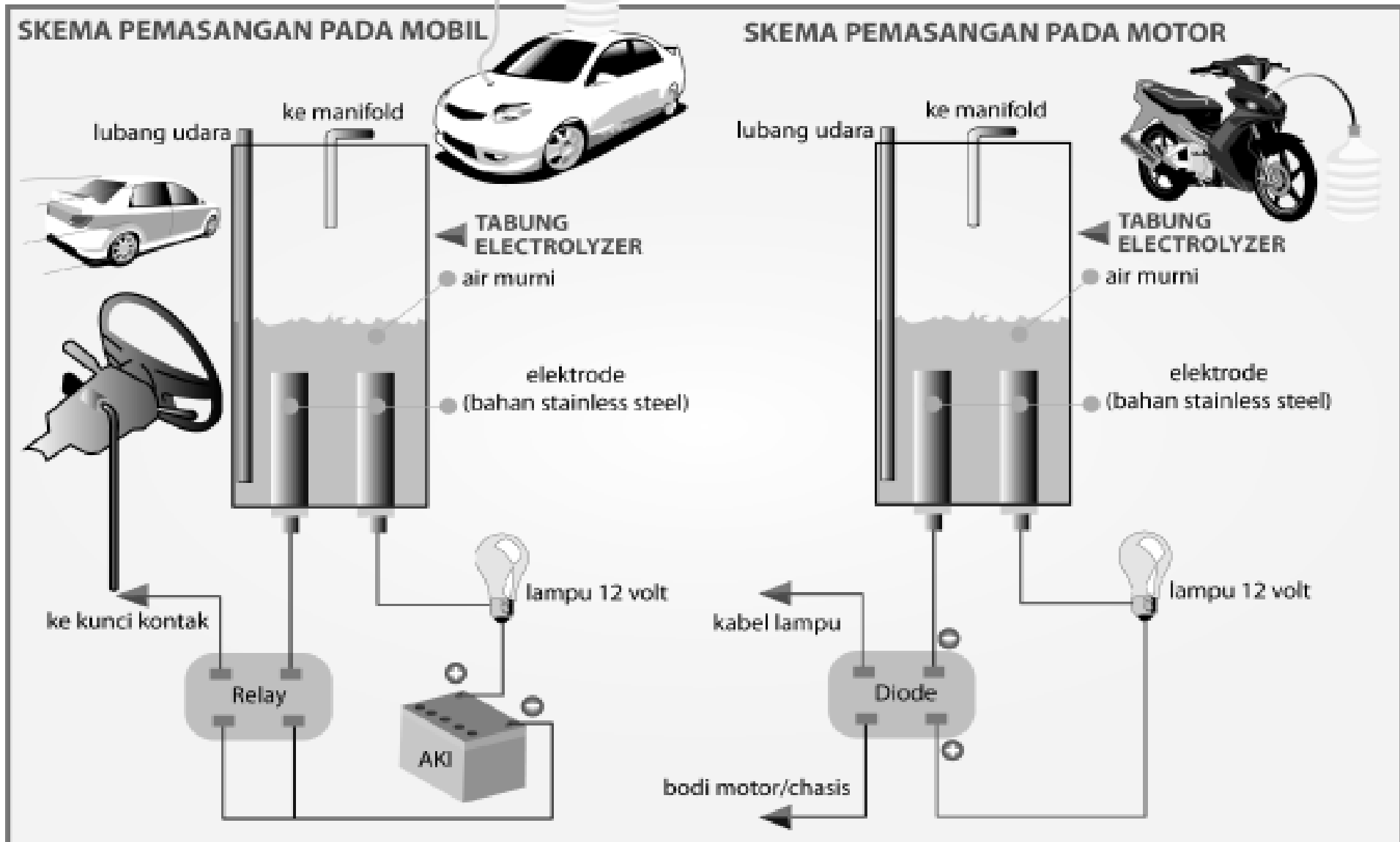
# DEVICE FOR GENERATING HYDROGEN FOR USE IN INTERNAL COMBUSTION ENGINES US 2007/0246351 A1

Matthew M. Smola, Centennial, CO  
(US); Frank Schubert, Pacific Grove,  
CA (US)

An electrolysis conversion system for converting water into hydrogen and oxygen, includes a housing in which are housed electrodes. The electrodes are immersed in an electrolyte and are connected to a positive and negative sides of an energy source. The housing is a non conductive material that has chambers to separate the hydrogen and the oxygen. The present invention further discloses a method of utilizing the electrolyzer in conjunction with the fuel system of an internal combustion engine to improve the efficiency of said internal combustion engine.



# JOKO SUTRISNO, JOKO YANG LAIN



# BAHAN BAKAR AIR? UMM

- ❑ ANALISA PEMILIHAN ELEKTROLISER BAHAN BAKAR AIR PADA SEPEDA MOTOR, MOHAMMAD MUSTAGFIRY, 03510092, , (Ir. Suwarsono, MT.) Budiono, S.Si., MT.)2008
- ❑ Pengaruh Pemilihan Elektroda Terhadap Laju Produksi Gas Hidrogen Melalui Metode Elektrolisis Pada Kompor Bahan Bakar Air, NAMA : ADI NUGROHO, 03510070, (Budiono, S.Si,MT) (Ir. Suwarsono MT), 2008
- ❑ PEMASANGAN DAN PENGUJIAN TABUNG TENAGA UNTUK MENDAPATKAN EFISIENSI BAHAN BAKAR PADA SEPEDA MOTOR JENIS HONDA SUPRA FIT X 100 CC, CAHYO PAMBUDI LAKSITO PUTRO, Ir. Trihono Sewoyo, MT dan Bapak Ir. Ali Mokhtar, MT, NIM : 04510015, 2009
- ❑ PEMASANGAN DAN PENGUJIAN TABUNG TENAGA UNTUK MENDAPATKAN EFISIENSI PENGGUNAAN BAHAN BAKAR PADA SEPEDA MOTOR JENIS HONDA SUPRA 125cc, AMIRRUL MUTTAQIEN, 04510065, 2009,

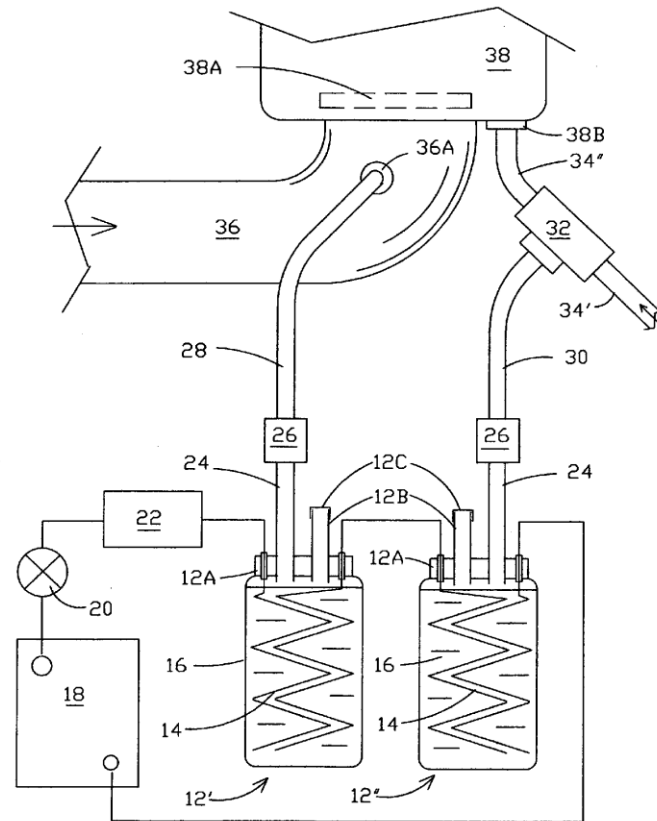


# HYDROGEN-FROM-WATER ON-DEMAND SUPPLEMENTAL VEHICLE FUEL ELECTROLYZER SYSTEM

Alex Rivera, Northridge, CA (US)

US 2010/0038236 A1

A simple electrolyzer system, that can be easily installed in most motor vehicles, including boats, generates a gaseous mixture including hydrogen as auxiliary motive fuel to provide increased performance and mileage. The electrolyzer system is powered electrically from the vehicle battery and consumes only water. In a preferred embodiment, a pair of similar electrolyzer cells, mounted in the engine compartment of the vehicle, generate a gaseous mixture of hydrogen and oxygen that is delivered independently to corresponding input ports at two strategically selected domains in the vehicle's air intake system: one at the intake manifold and the other at the main air intake duct leading to the intake manifold. A check-valve disconnect coupling in each gas delivery hose serves as a flash-back arrester for safety, and facilitates maintenance.





# JOKO SARWONO

Bersama ini penulis mengirimkan berkas proposal penelitian pembuatan alat penghemat bahan bakar minyak untuk kendaraan bermotor yang dinamakan "Electrolyser" atau "Booster". Penulis memilih penelitian pembuatan alat tersebut dengan system "Dry Cell" bukan dengan system "Tabung" yang elektrodanya tercelup elektrolit, karena system "Dry Cell" lebih Ekonomis dan efisien, dapat dilihat

**Honda Civic 1500 cc Th. 1978.**

: **Tanpa** alat elektrolisa pemakaian bensin 940 ml dalam jarak 10,10 Km. dalam waktu 15 menit, rata rata kecepatan 40 Kmj dan Cuaca cerah.  
Pemakaian bensin dalam 1 L = 10,74 Km.

: **Dengan** alat elektrolisa pemakaian bensin 800 ml dalam jarak, waktu, kecepatan dan cuaca sama.  
Pemakaian bensin dalam 1 L = 12,62 Km

Dengan alat elektrolisa 1 L dapat menempuh jarak 12,62 Km.  
Tanpa alat elektrolisa 1 L menempuh jarak 10,74 Km.  
Tiap 1 L Bensin dengan memakai alat elektrolisa mempunyai keuntungan jarak tempuh  $12,62 \text{ Km} - 10,74 \text{ Km} = \underline{1,88 \text{ Km}} = 17,50 \%$ .



# JOKO SARWONO



Formula	: $H_2$
Molecular wt.	: 2.015
Sp. gr. gas or at 60 ° F	: 0.06959
Boiling point ° F	: - 422.9
Sp. gr. liquid at 60 ° F	: 0.071
Sp. heat eq.wts. at constant press.	: 3.409
Cu.ft. per lb. 60° – 30 in.	: 187.723
Lb. per Cu. Ft.	: 0.005327
B.t.u. per cu. Ft.	: 323.9
B.t.u. per lb.	: 60,810
Kcal. per Gram	: 33. 69

Reproduced from “J.H. Perry Chemical Engineer s Handbook”  
Copyright, 1934 BY THE  
MCGRAW – HILL BOOK COMPANY, INC.  
Page 1950

Note: 1 L Electrolit = 1.860 L Hydroxy = 2.883.516 Kcal.  
1 L HHO / Hydroxy = 2/3 Hydrogen : 1/3 Oxygen.

Malang, 30 - juli - 2008



UNIVERSITAS MUHAMMADIYAH MALANG

Jawa Timur, Indonesia

dari Muhammadiyah  
untuk Bangsa



**PERCOBAAN : Tgl. 05 – 09 – 2009.**

**Tiga tabung Electrolizer dengan isi 700 ml Electrolit per tabung, jumlah 2.100 ml yang diprocess dengan system Electrolisa, tegangan 13,8 V. DC, arus 5,5 Amp. dihubungkan seri dan dioperasikan selama 24 jam non stop.**

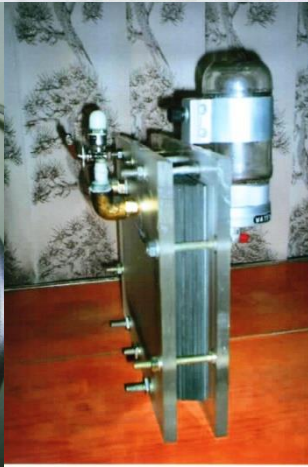
**Dalam 24 jam Electrolit dalam 3 tabung tersebut berkurang 210 ml dan menghasilkan gas Hydroxy / HHO per menit sebanyak 250 ml. Angka 250 ml per menit tersebut adalah hasil dari 2 kall percobaan pada Tgl. 25 – 01 – 2008 dan 25 – 05 – 2009.**

**Dalam 24 jam gas Hydroxy yang dihasilkan =  $24 \times 60 \times 250 \text{ ml} = 360.000 \text{ ml}$ .**  
**Dengan nilai pembakaran sebesar =  $360.000 \times 0,66 \times 0,069 \times 33,69 \text{ Kcal} = 552.327 \text{ Kcal}$ .**  
**Atau 210 ml Electrolit menghasilkan = 552.327 Kcal.**  
**Dari 1 L Electrolit menghasilkan =  $1000 : 210 \text{ ml} \times 552.327 \text{ Kcal} = 2.630.128 \text{ Kcal}$ .**  
**1 L Electrolit mengandung air 907 ml, 1 L air menjadi Electrolit  $1000 : 907 = 1,10 \text{ L}$ , BD= 1,26**  
**1 L air =  $1,10 \times 2.630.128 \text{ Kcal} = 2.893.140 \text{ Kcal}$ .**

**Dari hasil penemuan tersebut , Air dapat kita terapkan untuk penghematan pemakaian bensin/solar dikendaraan bermotor. Dengan 3 tabung Eledtrolizer per jamnya mampu menghasilkan ,  $60 \times 250\text{ml} \times 1,53 \text{ Kcal} = 22.950 \text{ Kcal}$ , atau sama dengan  $22.950 : 8.594 \times 1 \text{ L} = 2,67 \text{ L Bensin}$ .**

**Untuk dipakai dikendaraan tiap jamnya mampu menghemat 2,67 L Bensin..**

**Untuk kendaraan yang mengkonsumsi bensin rata-rata 5 L per jam, dengan penghematan per jamnya 2,67 L bensin, berarti ada  $2,67 : 5 \text{ L} = 53 \% \text{ penghematan}$ , lonsses diabaikan.**

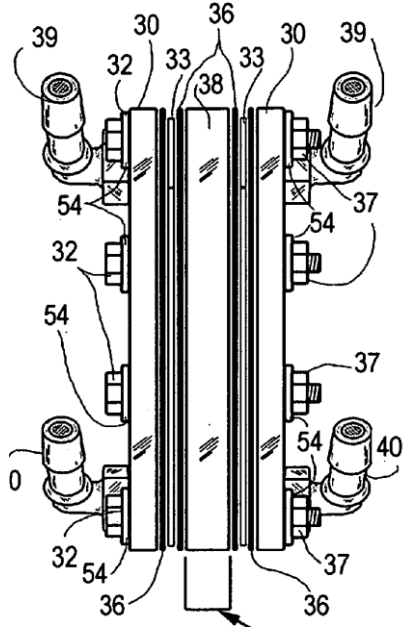
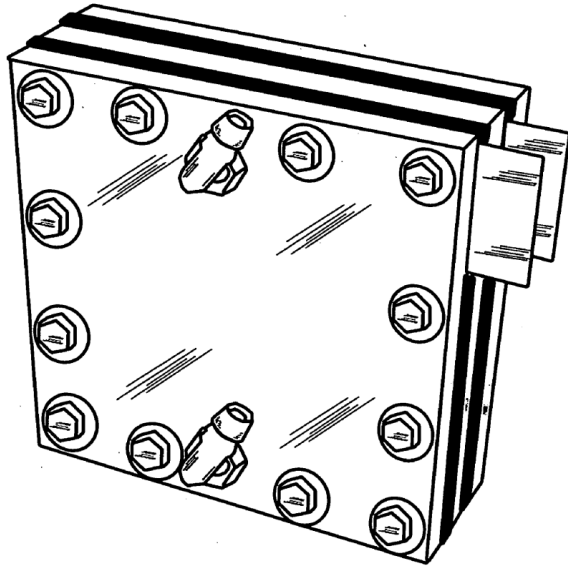




# COMPACT HYBRID CELL HYDROGEN GENERATOR US 2011/0089029 A1

Robert Charles Volk, JR., (US)

A compact hybrid cell hydrogen generator that produces hydrogen-oxygen gas for use with vehicles, internal combustion engines and other applications that solves design shortcomings of present state of the art systems while presenting an efficient and reliable, compact, cost efficient system of producing hydrogen-oxygen gas without requirements or investments into expensive infrastructure, or ill fitting and cumbersome equipment

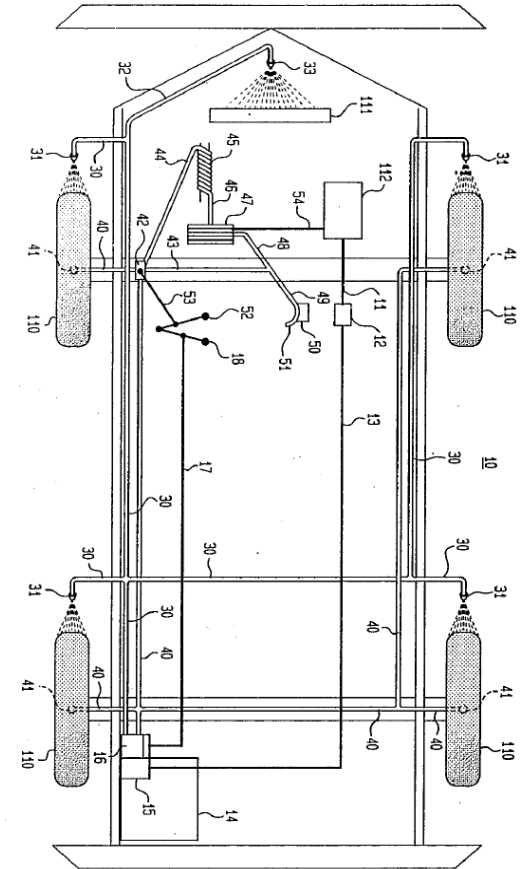


Joko sarwono, 2008,2009, Malang Indonesia



# PENDINGIN BAN

- ❑ TYRENDER Pendinginan ban mobil dengan penyemprotan air untuk memperpanjang usia.
- ❑ Bronze medal dan Special Award of Association Polish Inventors and Rationalizers di Seoul International Invention Fair (SIIF) 2018 Korea Selatan, INNOPA
- ❑ <http://www.umm.ac.id/id/muhammadiyah/17872.html>.
- ❑ Automobile tire, radiator and brake cooling system with passenger compartment water heater. US4771822A, United States, [Ricardo A. Barbosa](#)
- ❑ Device for cooling tires on vehicle wheels. US20060044125A1, [Michel Pierbon](#), Worldwide applications: 2002 [FR](#) 2003 [US](#) [EP](#) [JP](#) [KR](#) [WO](#) [DE](#)



# SMART TYRENDER

## SMART TYRENDER

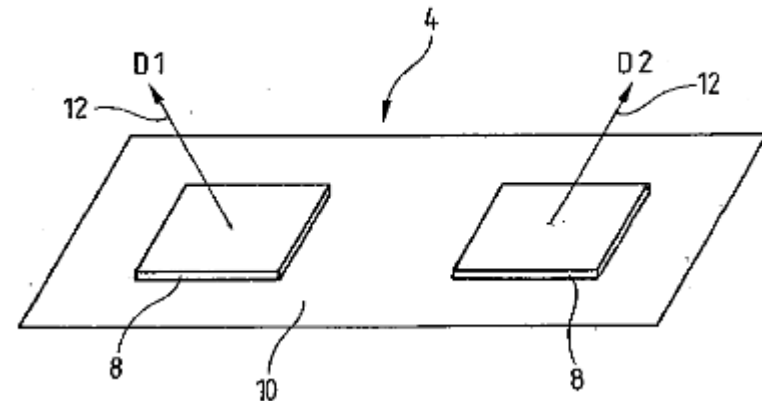
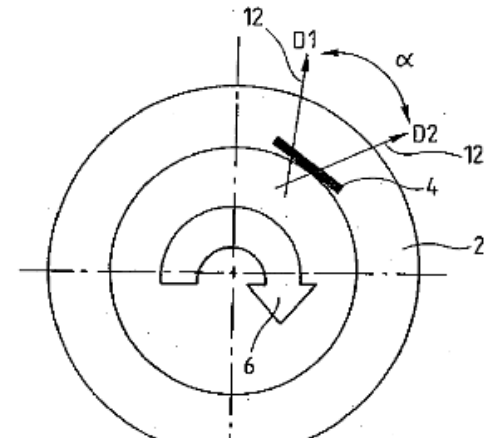
<http://www.umm.ac.id/id/berita/smart-tyrender-karya-mahasiswa-umm-sabet-bronze-medal-di-jerman.html>.

## Device for detecting the position of a vehicle wheel

US20060044125A1, [Michel](#)

[Pierbon](#), Worldwide applications:

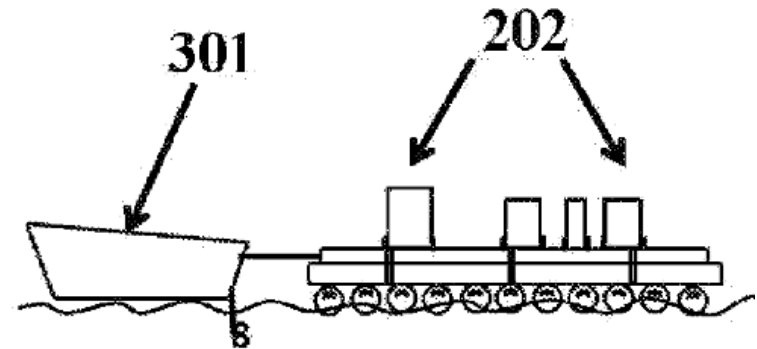
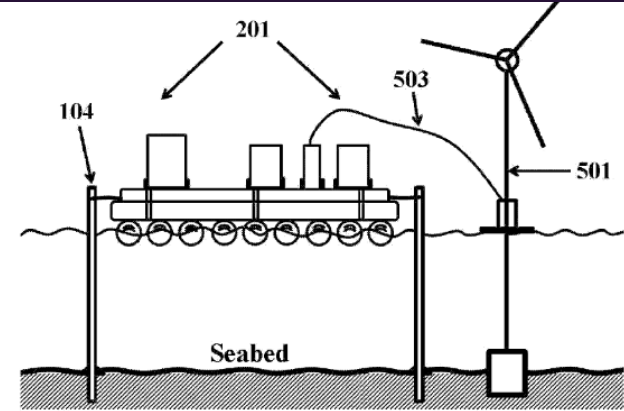
2002 [FR](#) 2003 [US](#) [EP](#) [JP](#) [KR](#) [WO](#) [DE](#)





# LAHAN TERAPUNG PRODUKSI GARAM

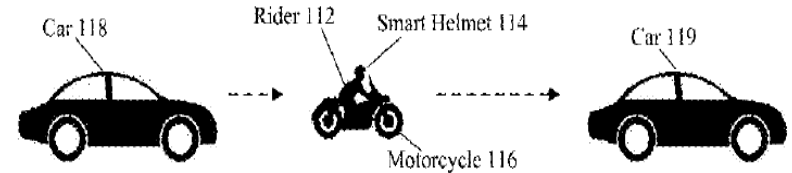
- ❑ Advance Innovation Jam (AI-JAM) di Tokyo, Jepang, INNOPA.
- ❑ <http://www.umm.ac.id/id/berita/teknologi-smart-tongkang-karya-mahasiswa-umm-siap-unjuk-gigi-di-jepang.html>.
- ❑ Kw: floating salt farm: 5850 patens
- ❑ Floating salt farm: WO2014066111A1, WIPO (PCT), 2012.
- ❑ Patent Citations (8); Cited By (4); Similar Documents (26)



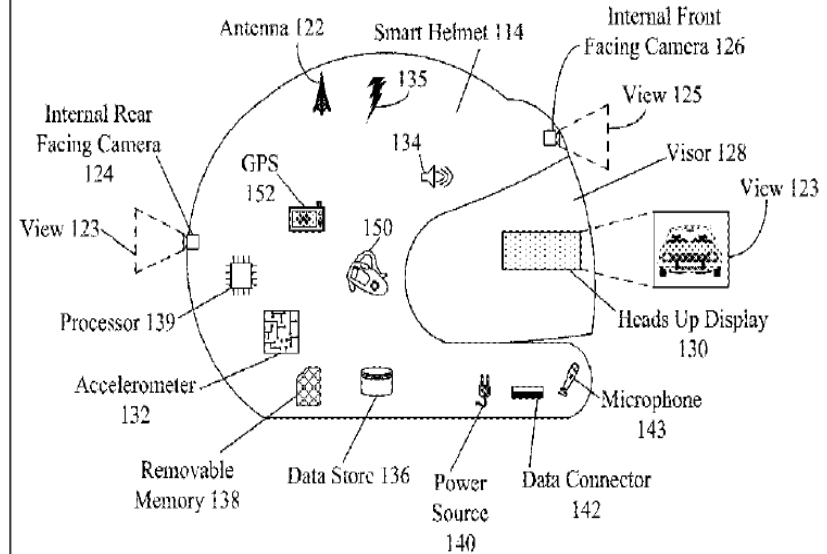
# SMART HELMET

- ❑ Medali perunggu, Seoul International Invention Fair (SIIF) 2019.
- ❑ Helm dengan GPS, sensor kecelakaan, charging, transmission
- ❑ <https://www.suara.com/otomotif/2019/12/07/140000/berjaya-helm-cerdas-karya-mahasiswa-umm-raih-medali-di-korea-selatan>.
- ❑ US20130215281A1, Smart Helmet, 2012
- ❑ Motorcycle helmet with electronic safety features US20130093585A1, 2011
- ❑ Enhanced global positioning system (GPS) based functionality for helmets US9247779B1.2012. Patent Citations (5); Cited By (27); Similar Document, s (26)

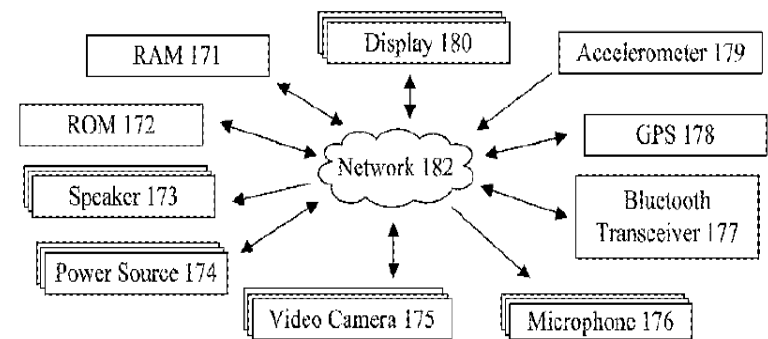
Smart Helmet Scenario 110



Smart Helmet Embodiment 120



Smart Network Embodiment 170

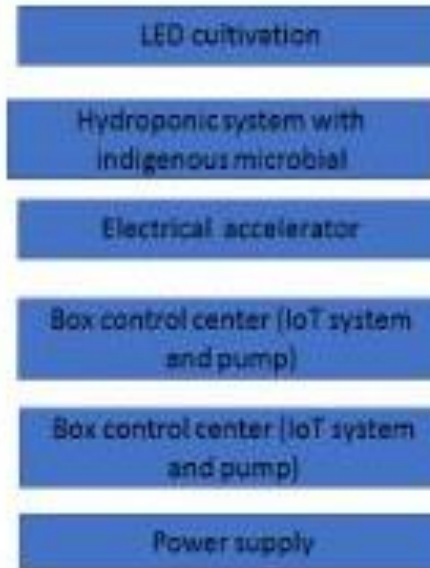


# INTEGRATED ELECTRICAL ACCELERATOR PLANT GROWTH WITH LED CULTIVATION AND INDIGENOUS MICROBIAL FERTILIZERS CONTROLLED IRRIGATION SYSTEM ON SMART FARMING TECHNOLOGY

- (Gold Medal) Advanced Innovation Global Competition (AIGC), Nanyang Technological University, Singapura, November 2019



INTEGRATED ELECTRICAL ACCELERATOR PLANT GROWTH WITH LED CULTIVATION AND INDIGENOUS MICROBIAL FERTILIZERS CONTROLLED IRRIGATION SYSTEM ON SMART FARMING TECHNOLOGY

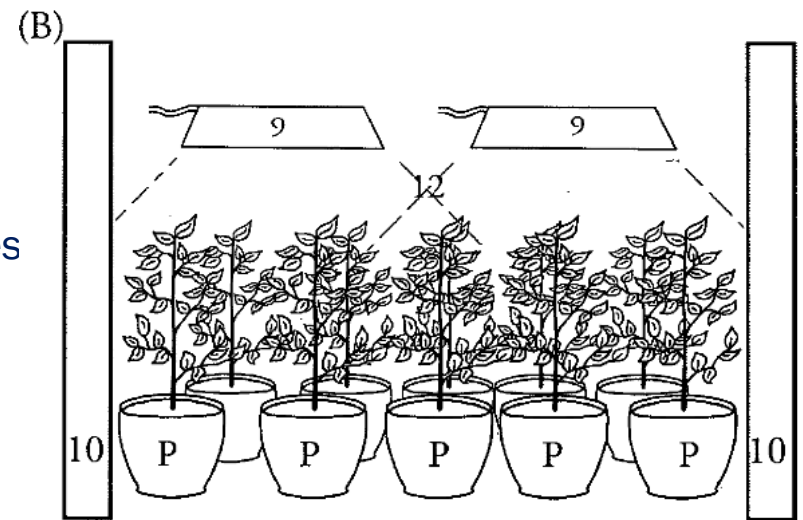
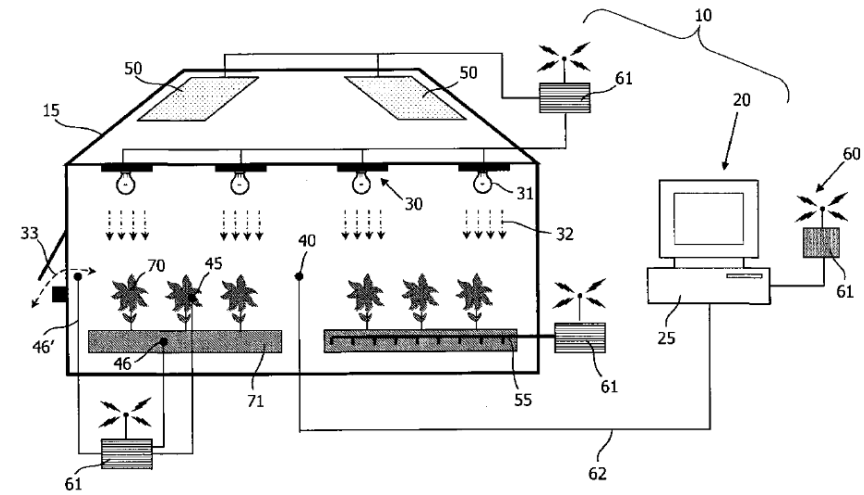


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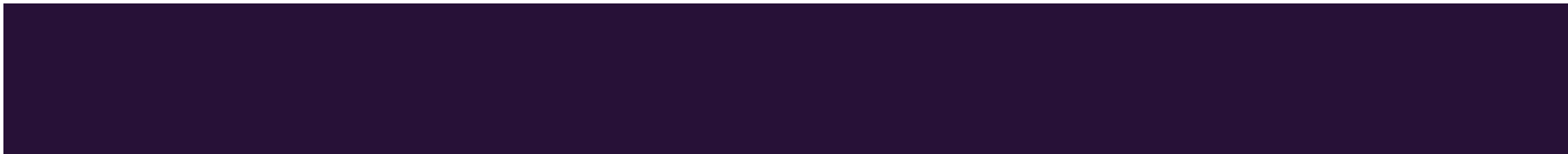


# INTEGRATED ELECTRICAL ACCELERATOR PLANT...

- ❑ Led lighting device for a greenhouse capable of promoting plant growth, WO2010101343A1.
- ❑ Spectral specific horticulture apparatus, US20120198762A1,
- ❑ Method and system for organic cultivating and environmental control of container grown plants, US8819988B2, [Michael Corsi](#), [Stephen Doyle](#), 2011
- ❑ Devices and methods for growing plants, US20080222949A1, [W. Michael Bissonnette](#), dkk, 2008.
- ❑ An electromagnetic stimulator for altering the plant growth behavior, WO1999035897A1, 1998
- ❑ Method and apparatus for enhancing growth characteristics of seeds using ion-electron avalanches US6023880A
- ❑ Use of bacteriocins for promoting plant growth and disease resistance, CA2629350A1
- ❑ Method of preparing magnelized seeds, CN87101591A







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