

presentation/演示文稿

h jy

TongJi University

November 10, 2013

目录

幻灯片测试

我的第一张幻灯片。

幻灯片测试

我的第一张幻灯片。

Definition

definition 1...

Proof.

We leave the proof as an exercise to our astute reader. We also suggest that the reader generalize the proof to non-Euclidean geometries. □

A sample slide

A displayed formula:

$$\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}$$

An itemized list:

- itemized item 1
- itemized item 2

Theorem

In a right triangle, the square of hypotenuse equals the sum of squares of two other sides.

$$u + iv = a \sin(x + iy) \tag{1}$$

$$u = a \sin x \cosh y, \tag{2}$$

$$v = a \cos x \sinh y \tag{3}$$

Acknowledgment

Fred Gornik, Power+Energy, Inc.

<http://powerandenergy.com>

If you click [here](#), you will jump to the slide labeled “sample”.
Clicking [here](#) will also take you to the “sample” slide.

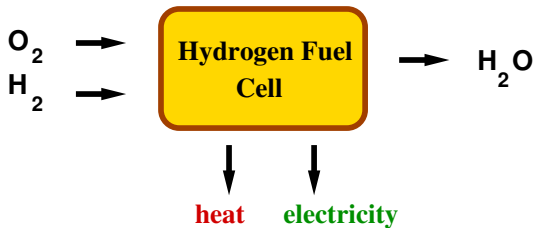
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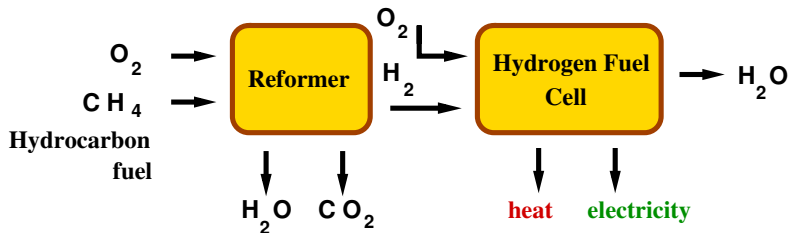
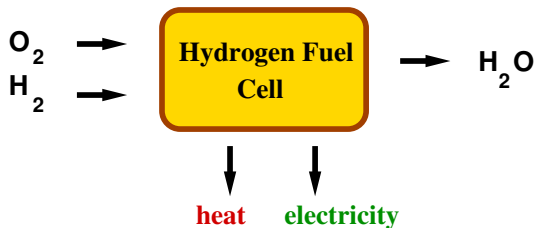
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Hydrogen fuel cells: overview



Hydrogen fuel cells: overview

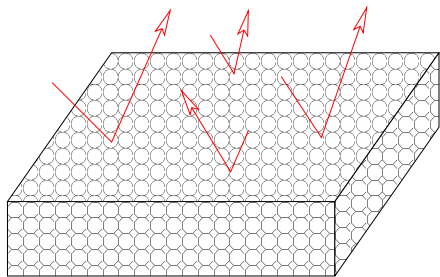


The Hydrogen-Palladium interface

Γ_0 = rate of hydrogen molecules impacting a surface

Representative value: 10^{19} hits/cm²/sec

Γ_0 *proportional* to pressure



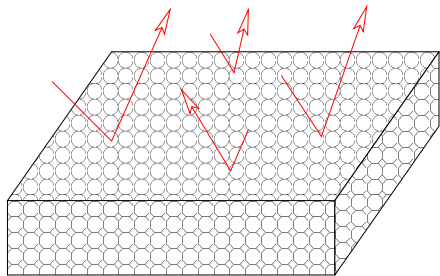
Around 10^{14} surface sites/cm²

The Hydrogen-Palladium interface

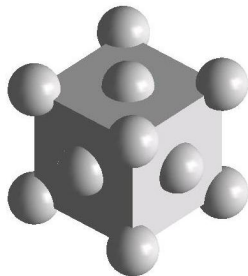
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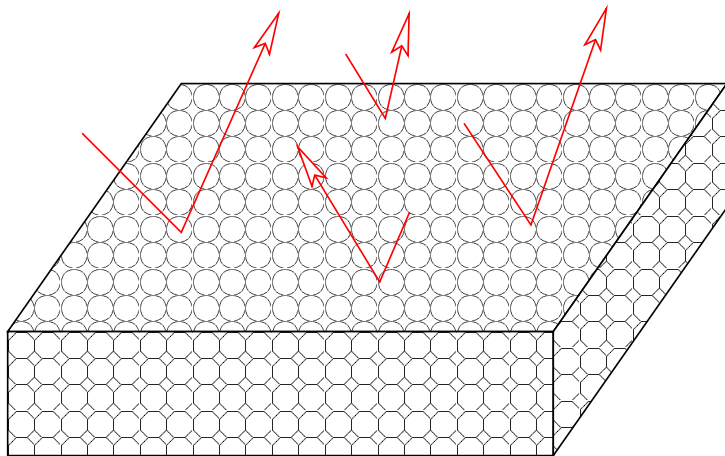
Γ_0 *proportional* to pressure



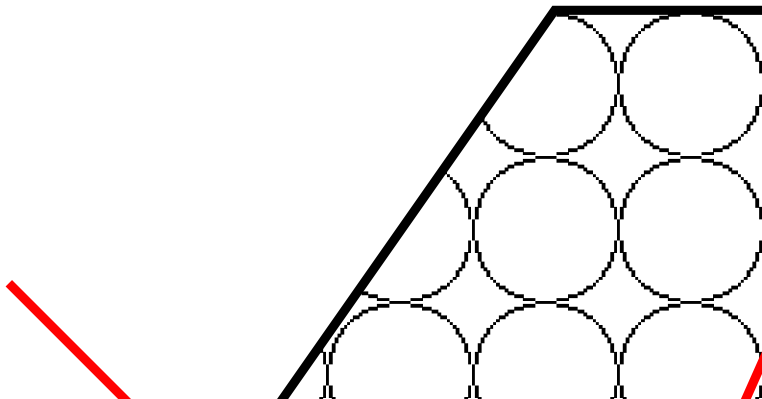
Around 10^{14} surface sites/cm²



Hydrogen fuel cells: overview



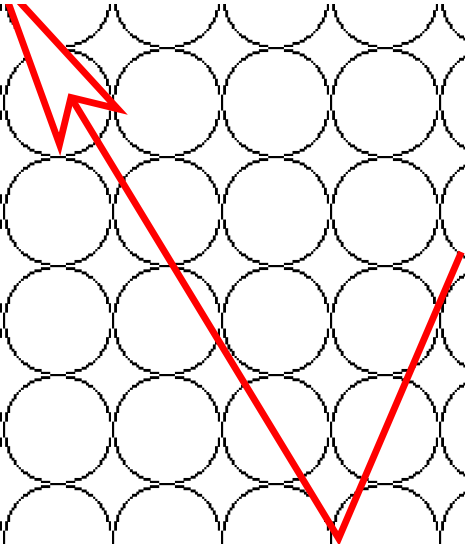
Hydrogen fuel cells: overview



Hydrogen fuel cells: overview



Hydrogen fuel cells: overview



Hydrogen	1
Hydrogen production	2
Hydrogen storage	3
Hydrogen distribution	4
Hydrogen fuel cells	5
Hydrogen safety	6
Hydrogen infrastructure	7
Hydrogen economics	8
Hydrogen policy	9
Hydrogen research and development	10
Hydrogen demonstration projects	11
Hydrogen commercialization	12

hgy (Tongji University) presentation/演示文稿 November 10, 2013 8 / 11

Modeling the surface layer

Equilibrium:

$$\Gamma_0 S_0 (1 - \alpha)^2 = k_d \alpha^2 \quad \Rightarrow \quad \left(\frac{1 - \alpha}{\alpha} \right)^2 = \frac{k_d}{\Gamma_0 S_0}$$

Fraction of occupied surface sites on the surface = α , $0 \leq \alpha \leq 1$

Solve for $P(x)$:

$$P(x) = [1 + W(z)]^2$$

$$k_i \alpha (1 - \beta) = k_o \beta (1 - \alpha) \quad \Rightarrow \quad \frac{1 - \alpha}{\alpha} = \frac{k_i}{k_o} \frac{1 - \beta}{\beta}$$

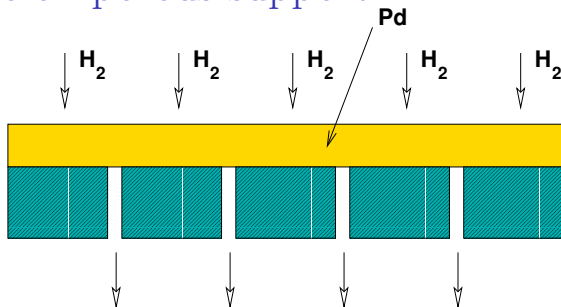
Eliminate α :

$$\frac{\beta}{1 - \beta} = \frac{k_i}{k_o} \sqrt{\frac{\Gamma_0 S_0}{k_d}}$$

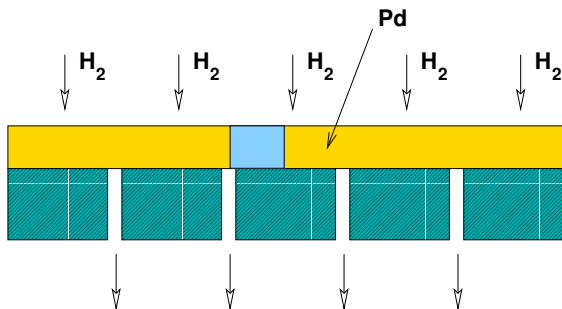
Numbers

tube radius	r	0.3175 cm
tube wall thickness	δ	0.0003 cm
flow rate	F	8330 cm ³ /sec
inlet pressure	$P(0)$	4.08 atm
ambient pressure	ρ	1.36 atm
temperature	T	673 Kelvin
diffusivity	κ	6.96 10 ⁻⁸ mol/(cm sec atm ^{1/2})
gas constant	R	cm ³ atm / (mol Kelvin)

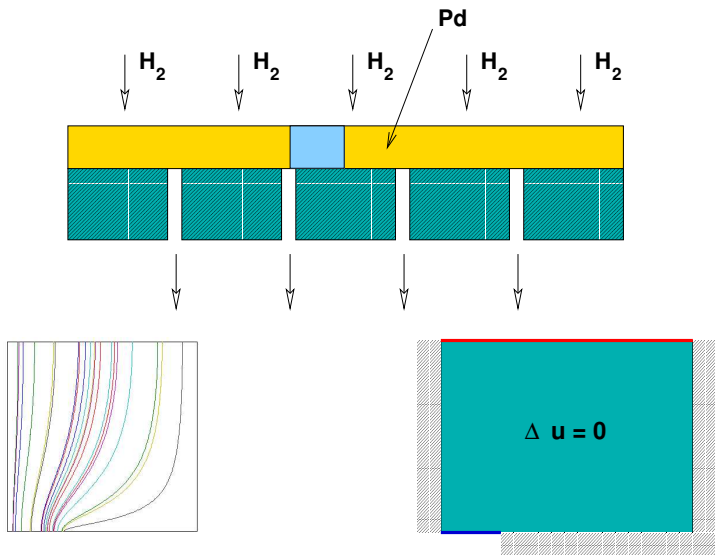
Membrane on porous support



Membrane on porous support



Membrane on porous support



Another title

Some text

I am not on slide 8

Another title

Some text

Uncover me on slide 2 (-)

I am not on slide 8

Another title

Some text

Uncover me on slide 2 (-)
visible from slide 3 on (-)

I am not on slide 8

Another title

Some text

Uncover me on slide 2 (-)
visible from slide 3 on (-)
only from slide 4 (-)

I am not on slide 8

Another title

Some text

Uncover me on slide 2 (-)
visible from slide 3 on (-)
only from slide 4 (-)
on slide 5 and further (-)

I am not on slide 8

Another title

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only from slide 4 (-)

on slide 5 and further (-)

Uncover me on slide 6

I am not on slide 8

Another title

Some text

Uncover me on slide 2 (-)

visible from slide 3 on (-)

only from slide 4 (-)

on slide 5 and further (-)

visible on 7

I am not on slide 8

Another title

Some text

Uncover me on slide 2 (-)

visible from slide 3 on (-)

only from slide 4 (-)

on slide 5 and further (-)

only on slide 8

I am on slide 8

Another title

Some text

Uncover me on slide 2 (-)
visible from slide 3 on (-)
only from slide 4 (-)
on slide 5 and further (-)

I am not on slide 8
on slide 9