

i-Sensor Electronic sensor for water monitoring



Wutthinan Jeamsaksiri
&
TMEC ISFET team

i-Sensor for water monitoring

Water quality: What to measure?

Dissolved oxygen (death or alive),

pH (growth rate of shrimp), and
etc.

Our targeted product: pH e-sensor

i-Sensor for water monitoring



LITMUS

Common,
cheap



GLASS
ELECTRODE

Common,
accurate



e-pH sensor

High end,
laboratory

i-Sensor for water monitoring

- Large areas -> fast, large coverage, rugged



So what do we use?



i-Sensor for water monitoring



LITMUS

Cheap
Manual meas.
Not accurate
Water color

NSTDA investors' day 22nd September 2011

[i-Sensor for water monitoring](#)



GLASS ELECTRODE

Difficult to maintain,
Glass is breakable

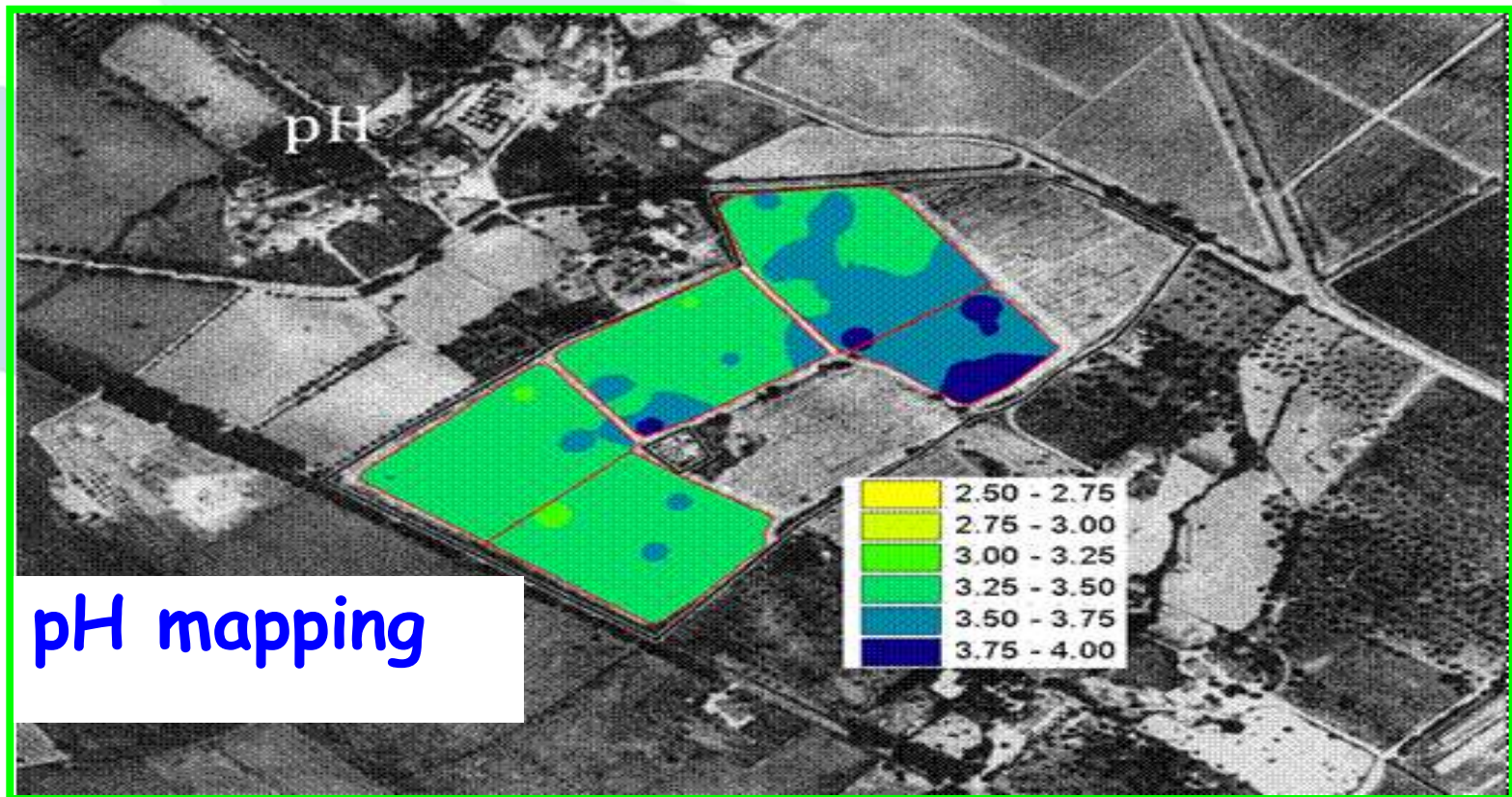


i-Sensor: e-pH Sensor

Rugged
Accurate
Fast
electronics

i-Sensor for water monitoring

With our i-Sensor we could do this ..



What are Our products ???



1. pH test kit



2. pH sensor hand-held

Technology Benefit

● Value Proposition

- Semiconductor sensor: small, very accurate
- Made of plastic casing: rugged
- Local manuf.: low cost of ownership, faster and better service

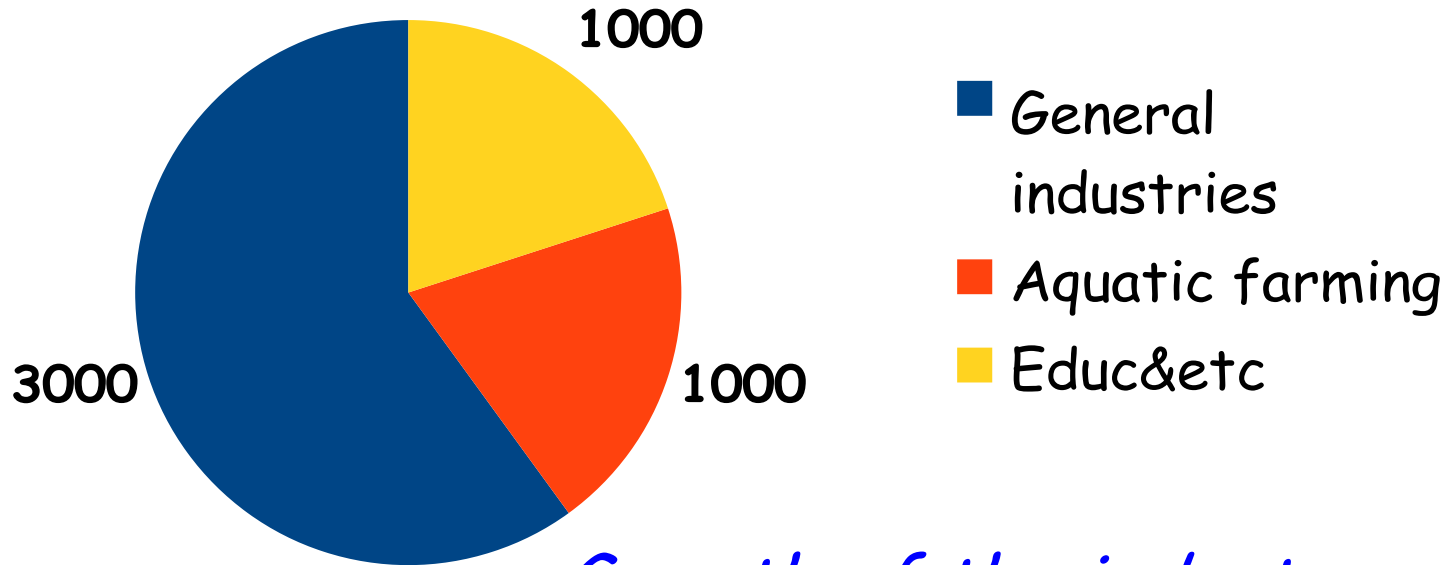
● Development Stage

- pH test kit : Commercial prototype
(mass manufacturing)
- pH sensor hand-held : Commercial prototype
- Pass ISO17025 test
- Filing a patent

Our target customers

- **Medium to large Aquatic farmers**
- **Industries with water treatment facilities**
- **Water monitoring system developer**
- **On-line electronics stores**

Potential Thai market



Growth of the industry: 20-30%

Projected market share (1st year)

- pH sensor hand held: **฿ 6 million**
- pH test kit: **฿ 5 million**
- **Growth: 20-30% year on year**

Business model

**ODM - design sensors,
supply chain management**

Sales Channel

- Aquatic supply chain
- Electronic component and sensor distributors

Business

Investment request

- **Mass production investment (plastic molding, etc)**
- **Revolving and reserved fund**

Most of the R&D and commercial prototypes have been done

Business

Proposition to investor

- IRR 70% in 5 years,
payback 18 months
- New sensors can be developed:
Phosphate, Potassium,
Nitrate (nobody has done it yet), etc.

BUSINESS

Target investors:

Angels with

- networks of electronics/sensor business
- marketing channels
- Suppliers of aquatic farming industry