

Title : Advanced DLC Technology

Subtitle: Evolution in manufacturing



O T A G A I

OTAGAI Forum Association

Company name : YOUTEC BANGKOK CO.,LTD

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23 Sep. 2015

1. Contribution to Thailand

1. Dramatically cost reduction

2. Changing all bottles into plastic



2.Selling point (1)

No.1 DLC technology company

Application of DLC Technology (1)

- HDD Media Disk (protecting against frictional wear)

DLC film thickness:15Å

about 60% market share worldwide

Patent: 6 registered & over 30 pending



2.Selling point (2)

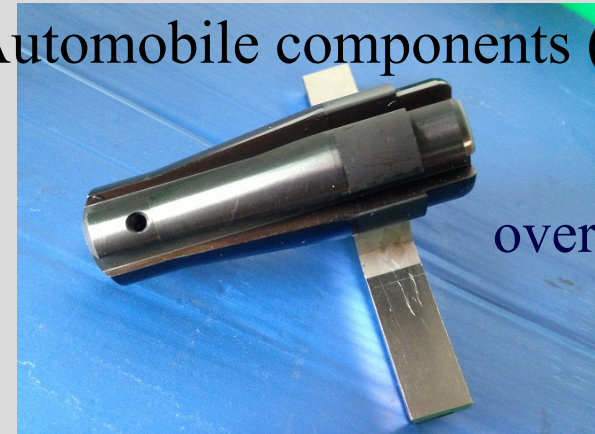
Application of DLC Technology (2)

■ Molds & Tools

Cutting tool for aluminum wheels



Mold for Automobile components (Hose Band)



thickness: 2 μ m



Tool life: over 3 times



Tool for Plastic injection molding



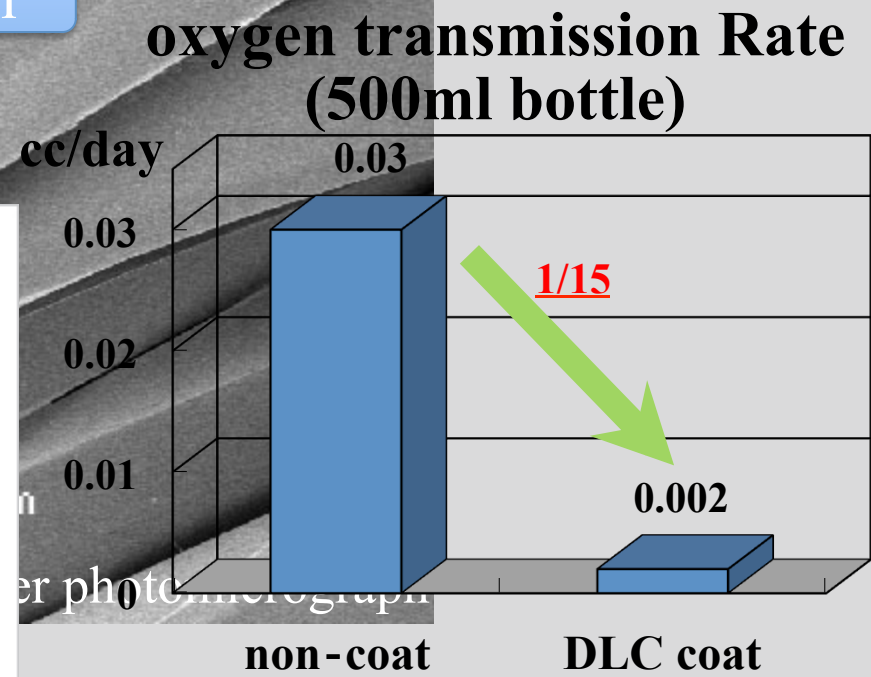
2.Selling point (3)

Application of DLC Technology (3)

- inner surface of plastic bottle (lower oxygen permeability)

R&D with Kirin group
 Been used since 2004 in Japan
 Patent: 7 registered & 39 pending

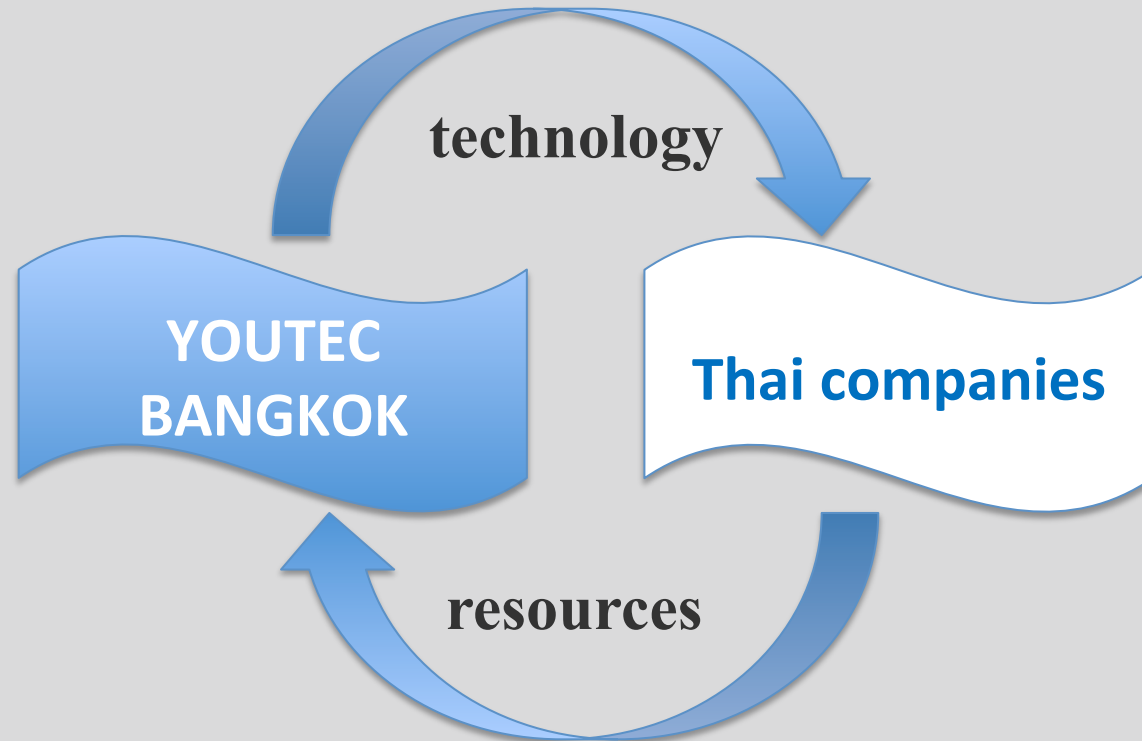
thickness:20nm



3. Spirit of OTAGAI

What we expect of Thai companies is

To cooperate with makers for business development



4. Summarize

**We never leave here Thailand,
to keep developing business with you
and never give up until grabbing success together.**



5. Company Information

R&D oriented company

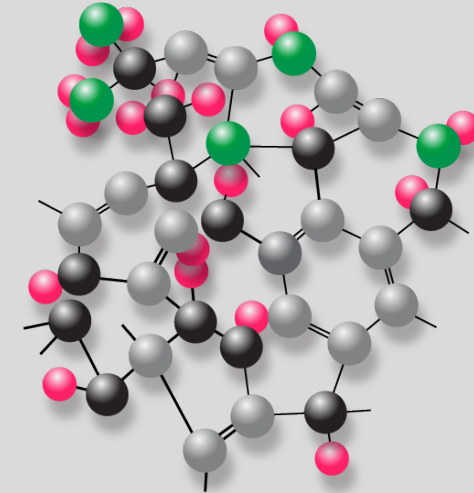
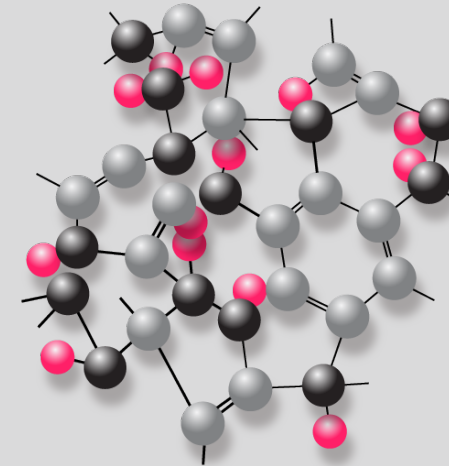
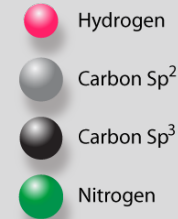
- **Location : Chiba, Japan**
- **Establishment: March 1992 (YOUTEC BANGKOK : Feb 2015)**
- **Employees : 53 (including R&D over 20)**

- **Advanced Thin-Film Technology Collaborator**
 - **Over 20 years of experience on DLC film**
 - **Wide & Considerable Experience in Vacuum Technology**

- **Business Model**
 - **DLC (and other vacuum) Equipment sales**
 - **DLC film coating service**



What is DLC (Diamond Like Carbon)



【Structure】

Amorphous carbon thin film similar to diamond

【Feature】

- **Very hard** – protect mold, components, etc.
- **High strength** against frictional wear
- **Very smooth surface, low friction**
- **High barrier** against gas, moisture, oxygen and anti-corrosion

