

**OXIDE**

**First Spin off venture company from  
National Institute for Material Science**

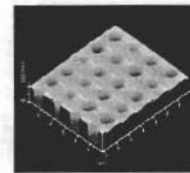
**"Dream and Practices"**



**Yasunori Furukawa  
Oxide Corp.**



**[www.opt-oxide.com](http://www.opt-oxide.com)**



**OXIDE**

**What is the risk for you?**

**You must do the things  
you think you cannot do.**

**You risk more by not  
risking anything.**

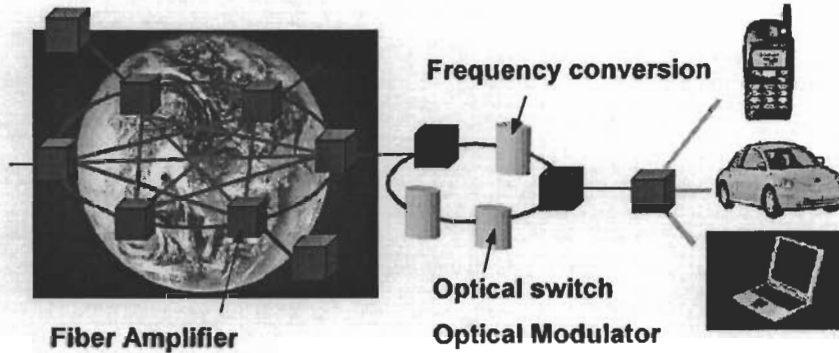


**Prof. M.M. Fejer  
Stanford Univ.**

**OXIDE**

## **Business Opportunity**

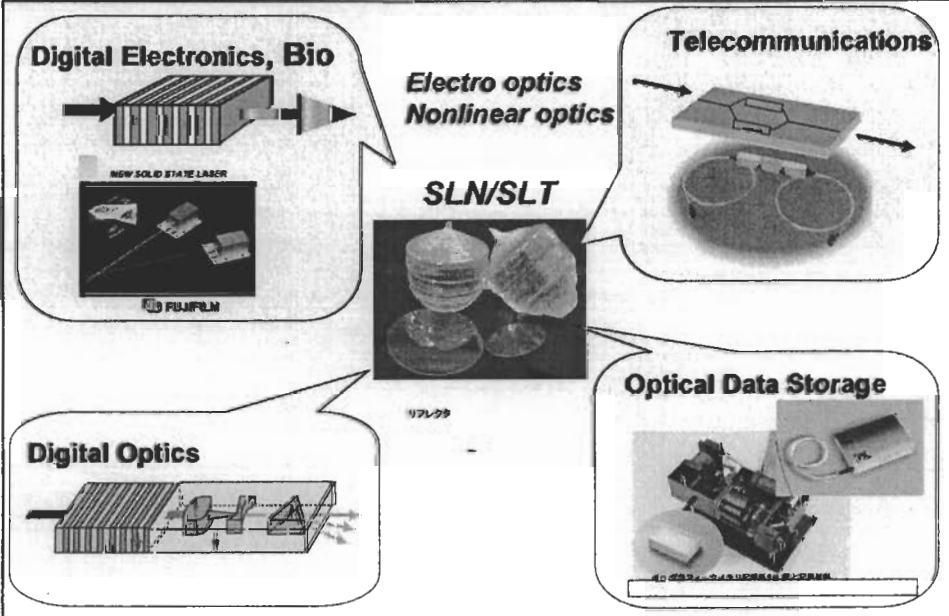
**Ultra High speed & high volume optical network system  
Tera-bit data capacity with WDM system**



**Key for Business: new functional material and devices**

**OXIDE**

## **Products & Applications**



**OXIDE Products & Applications**



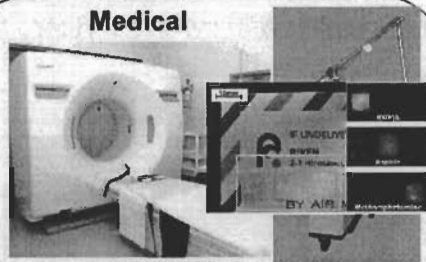
**CLBO  
NLO crystal**



**BBO  
NLO crystal**

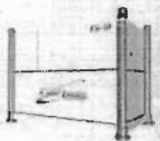


**Medical**



**PET, X-ray, CT**

**Nano technology**



**Femt second laser**



**Medical, Bio application**



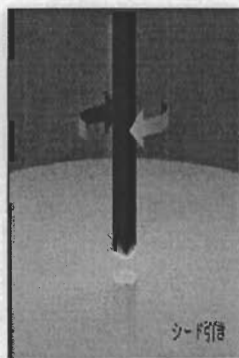
**surgery**



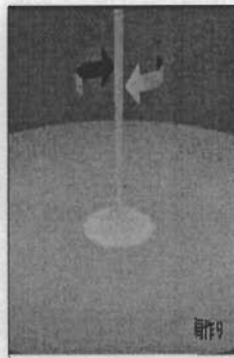
**Bio-chip**



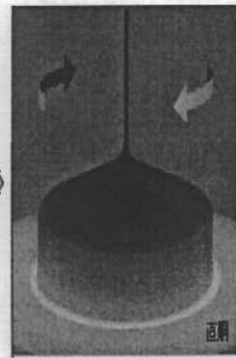
**OXIDE Conventional Crystals growth technology**



**seeding**



**Starting crystal growth**

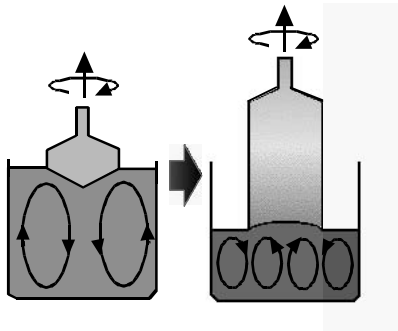


**Automatic diameter control**

**Material Breakthrough is necessary for Optical applications**

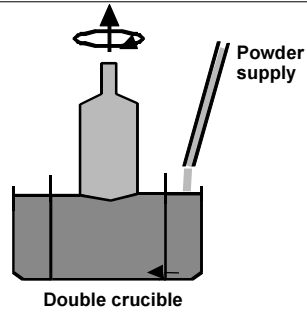
**OXIDE** *Novel Crystal growth technique by NIMS*

conventional CZ method



Some fundamental problems in conventional CZ growth method result from its "Batch system".

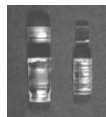
Novel method  
Double crucible with automatic powder supply system



Advantages of DCCZ Method  
Control of stoichiometry (growth from off-congruent melts)  
Growth under constant conditions (thermal conditions, melt convections)

**OXIDE** *Commercialization from Basic Research*

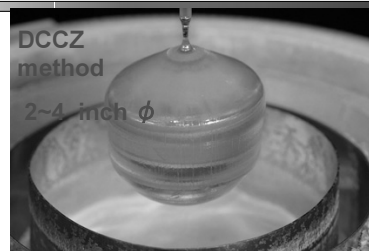
FZ method  
0.1~0.5 inch  $\phi$



DCCZ method  
1~1.5 inch  $\phi$



DCCZ method  
2~4 inch  $\phi$



>100 papers  
>30 patents

NIRIM 1988~1990



NIMS 1993~1999

License



OXIDE 2000~

**OXIDE** *OXIDE Corporation established, Oct. 2000*



Technology transfer  
Under license from NIMS



NIMS (National Institute for Material Science)  
Tsukuba



OXIDE  
Yamanashi

**OXIDE** *OXIDE Corporation*

Established in year 2000

Capital : 2.8M\$

Toshiba Ceramics, Toyota, Nikon, NTT, KLA Tencor and 7 VCs

Executive Management Team:

Dr. Y.Furukawa : Hitachi Metals, Stanford Univ, Kyusyu Univ, NIMS

Dr. S.Matsumura: Toshiba Ltd.,

Dr. A. Miyamoto : Hitachi Metals., Osaka, Univ.

Dr. F.Takei : Toshiba, Univ. of Tokyo

Dr. S. Miyazawa : NTT, Waseda Univ.

Dr. K.Kitamura : NIMS, President of SWING Ltd.



Team Profile

~ 33 people focus on core business. 9PhDs people.

More than 75 % of personnel are in engineering department.

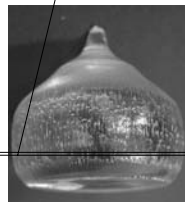
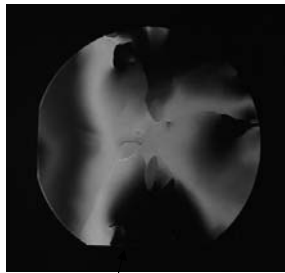
**OXIDE**

**OXIDE 1st head office for starting up**



**OXIDE**

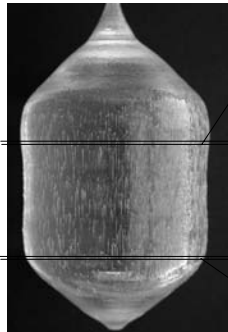
**Quality control & improved productivity**



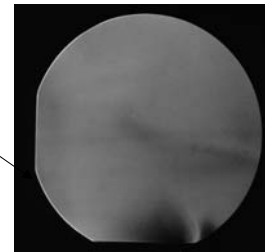
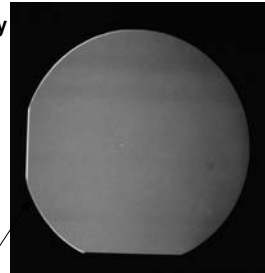
**Early R&D stage  
~10% yield (NIMS)**



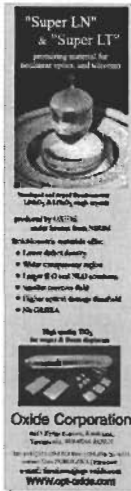
**New products & New technology  
Innovation Award(2003)  
Crystal Growth Association  
Award (2004)  
Venture Business Award(2005)  
X-ray topography**



**Production stage  
>95% yield (OXIDE)**



## OXIDE Marketing is the most important.

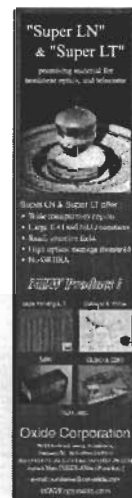


Advertisement

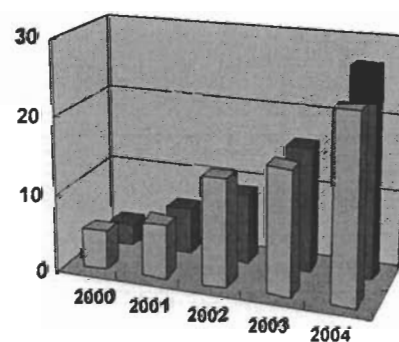
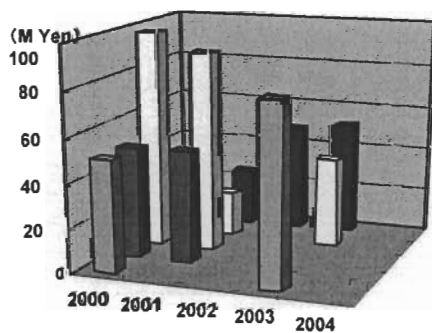
- Supply Material Solution
- World Wide Marketing
- Customer satisfaction
- Focus on Niche-market



International Exhibition  
 (CLEO, LASER, Photonic West)

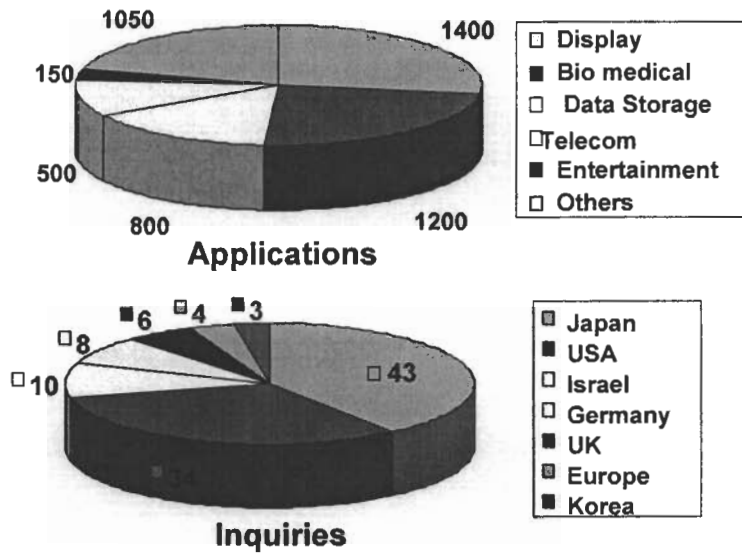


## OXIDE How to raise money ?



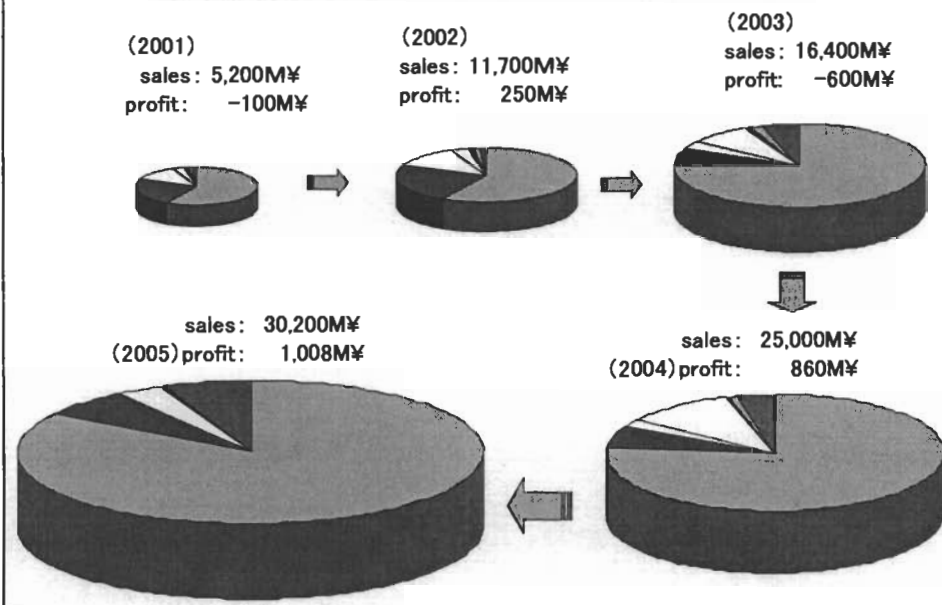
**OXIDE**

**New products sales**



**OXIDE**

**New products sales**

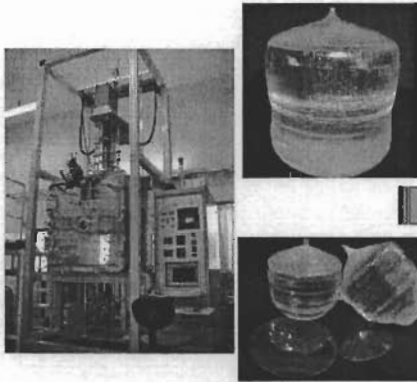




# OXIDE R & D Strategy and practices

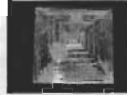
Phase I. Establish core business Phase II. Integration and other new materials

Improve new technology

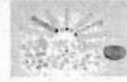


Nobel Patent Award  
New products and New Technology Award

SBIR and International collaboration



KN crystal  
(SONY, NTT)



Nd:YVO<sub>4</sub>, YAG Ceramics Laser  
Bio, Laser application  
(Ricoh, Mitsubishi)



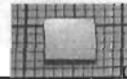
CLBO crystals  
UV Laser, Processing  
(NIKON, KLA, )



BBO crystal  
UV laser  
(GE, Phillips)

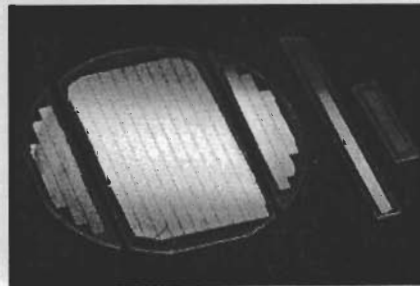


PPSLT devices  
Digital data storage, display  
(Panasonic, EPSON)



DAST crystal  
THz  
(NTT, ETH )

# OXIDE M & A Strategy

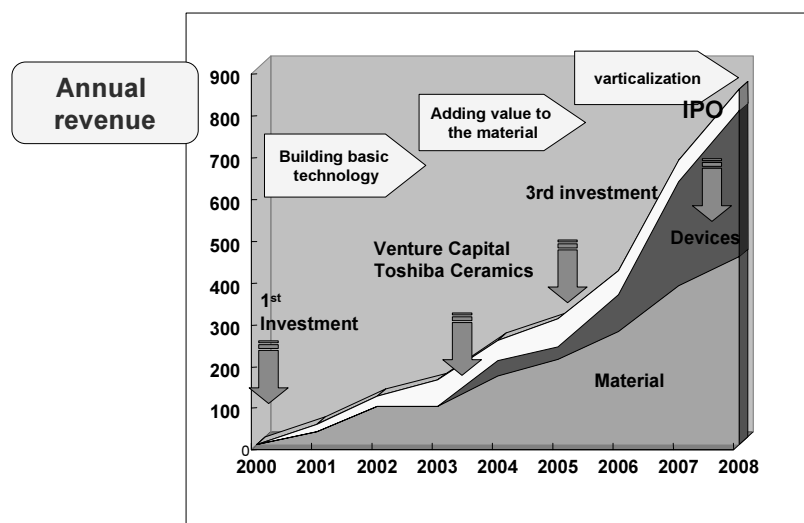


## **OXIDE** *New Head Office & Factory*

Open: May 2005    Land: 5000m<sup>2</sup> , Building 2700m<sup>2</sup>



## **OXIDE** *Future Business plan & Raising Capital*



**OXIDE**      *What is the risk for you?*

*You must do the things  
you think you cannot do.*

*You risk more by not  
risking anything.*



*Prof. M.M. Fejer  
Stanford Univ.*

**OXIDE**

*Supplying the material solutions to companies*



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