



# Laser Academy



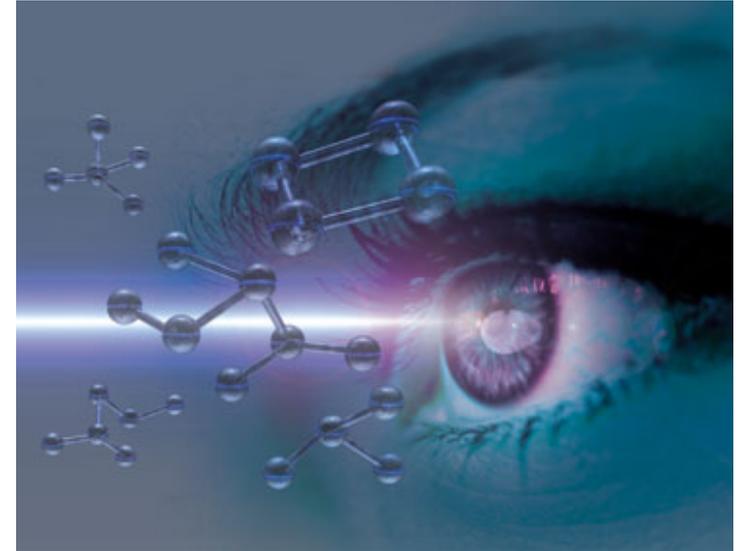
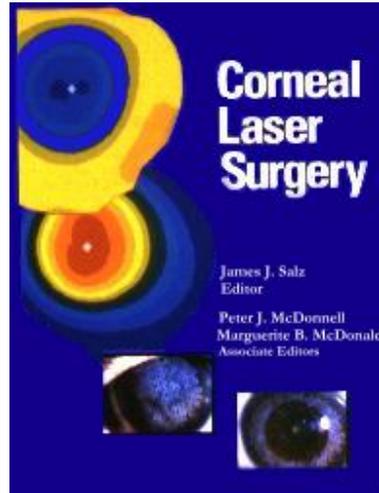
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# Laser therapy / surgery



## Lasers and high-intensity light treatment

- cancer
- vascular & pigmented lesions
- tattoo and hair removal

## Laser on eye



## Laser Equipment

# Design, manufacture & sell laser equipment



**CO2 laser**



**Nd:Yag laser**

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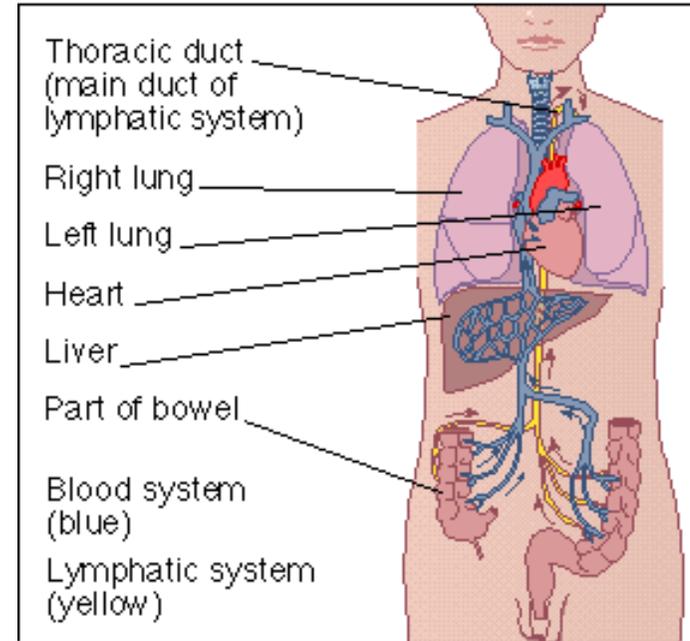
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# Lasers in medical treatment

**Doctors are trying to find new and better ways to use lasers in cancer surgery. As more cancer surgeons become trained in laser use and the technology improves, lasers may make increasing contributions to cancer treatment. Doctors are currently studying the effects of lasers in treating breast, esophageal, skin, colon, lung, brain, vulva, vaginal, cervical and head and neck cancers.**





## Laser eye operation

# Laser eye operation



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# Laser beauty applications



Peel hair



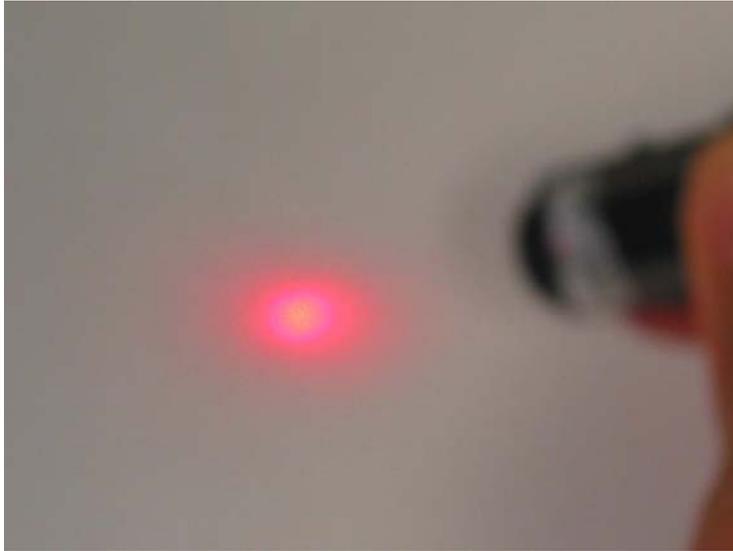
Snoring



Photo Facial Rejuvenation



## Laser medical pen



# Laser medical pen (coagulate blood)

- Portable and carry like a pen
  - Wavelength 980 nm, power 5 watt
  - Use similar to scalpel (cut) and coagulate bleeding
  - Use in field
- (note: At 980nm wavelength it is not visible to the eye. Red beam just to show the same power treated on the skin)



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## Laser scalpel

# Laser scalpel



- Portable and carry in a beg.
  - Wavelength 808 nm , power 8.5 watts
  - Stops bleeding, welds tissue and sterilizes wounds
  - Use in field
- (note: At 808nm wavelength it is not visible to the eye. Red beam just to show the same power treated on the skin)



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## Laser beam

# Beam formed by laser medical pen and laser scalpel



**Light/power meter**

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# Our capability

- **Laser technology**
  - Design & build high power lasers, laser engine, imaging system, range finder, fiber optics
- **Optics**
  - Design & manufacture lenses, mirrors, polarizer, gratings, filters, switches
- **Telecommunications**
  - Wireless, wired, fiber optics, laser beam data transmission, networking
- **Security systems**
  - Smartcard for ID, access system & home-office security



# Business Divisions

## Laser Products

- High Power Laser
- Laser vision system
- Laser radar
- Medical applications
- Laser lighting
- Night vision & IR
- Microwave

## • Communication

- Wireless
- Wired
- Fiber optics
- Laser beam data links

## Networking

## • Optics

### Design & manufacture

- lenses
- mirrors
- polarizer
- gratings
- filters
- Switches

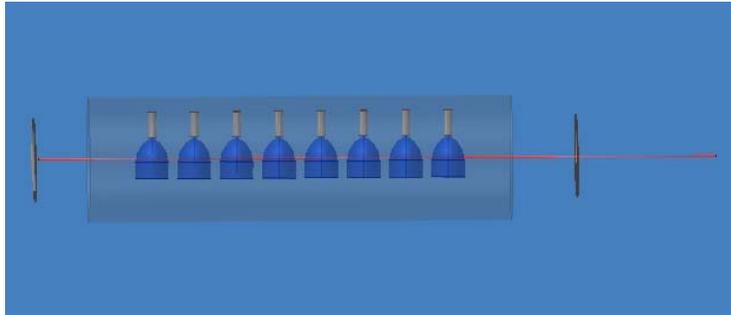
## Telescope

## • Security

- Smartcard for ID
- Access system &
- Home-office security



## Laser technology

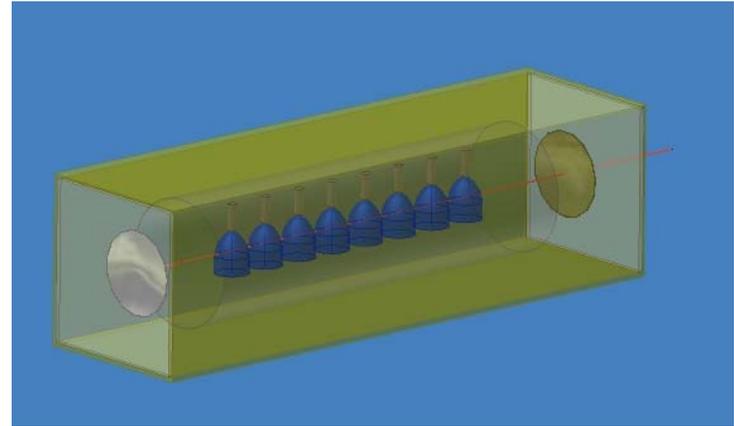


Chemical laser I/HF

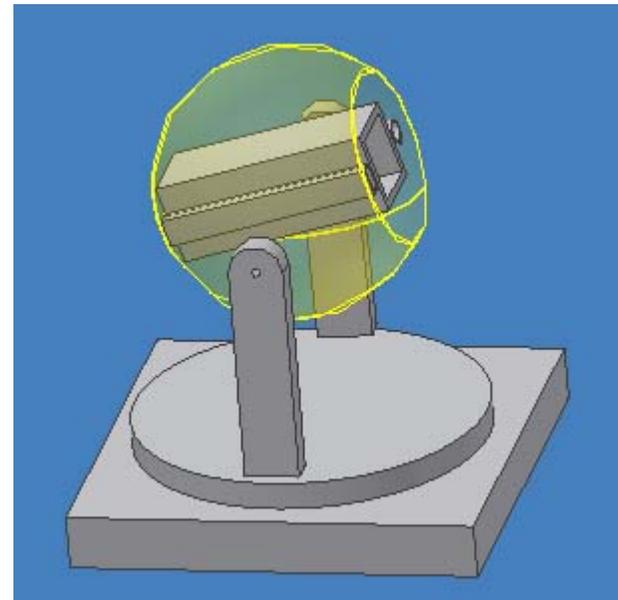


Control system

# Laser Technology



Chemical laser I/HF discharge mode



Turret guide and shoot

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## Laser vision system

- Use high intensity light visible to the eye
- High power light similar to a torch light
- Use in rescue operations eg. Sea

Laser vision – model 2003

- Use high intensity light visible to the eye
- High power light similar to a torch light
- Use in rescue operations eg. Sea

### Technical specifications

#### Optional:

#### Capability:

1/ See a distant image

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## Laser radar

- Similar principle to ordinary radar
- Wavelength in IR region
- Reflect almost any object (including carbon fiber – like UAV)
- Resolution 0.5 m x 0.5 m at distance of 50km
- Transmission / receive at the speed of light

### Technical specifications

Laser: VCSEL

### Capability:

1/ Identify image size 1m x 1m at a distant of 50km

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## Laser lighting / night marker

- Wavelength in far IR
- Proper visor can see this light
- Use for helicopter landing
- Invincible to enemy eyes

### Technical specifications

Laser: VCSEL

### Capability:

1/ Use for helicopter landing

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## Laser target illuminator

- Use a high power laser diode
- Wavelength 762 nm
- Power 1 watt
- Color red
- Mount on any gun

### Technical specifications

Laser: VCSEL

### Capability:

1/ Guide to shoot

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## Laser night vision & IR

- Special configuration could see a distant image
- Image only sensitive to our optical material
- Night vision image is like seeing a film negative
- Portable and can mount on head

### Technical specifications

Laser: VCSEL

### Capability:

1/ See a distant image

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## Laser communicator

- Use a laser beam to transmit / receive messages
- Immune to radio frequency interception
- No messages could be heard unless the beam is diverted
- High security data transmission
- Wireless remote control for UAV

### Technical specifications

Laser: VCSEL

### Capability:

1/ Use a laser beam to transmit / receive messages

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# Networking – fiber optics

- High security network using fiber optics
- Immune to radio magnetic frequency (no tapping)



# Telescope

- In line with existing optical units for making lenses, mirrors, etc
- Developed telescope for high optical vision system
- Incorporate night and IR vision
- Look for satellites and enemy aircrafts