# THREE-DIMENSIONAL CRYSTALLIZING π-BONDING , π-FAR INFRARED RAYS AND NEW SPACE ENERGY RESOURCE

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## ABSTRACT

The outer-most electrons of metal atoms and the remaining valence electrons of any molecular atoms make three dimensional crystallizing π-bondings. The electrons on the π-bonding orbital rotate clockwise or counter-clockwise and they then make electro-magnetic waves between atoms on the orbital because electron move between plus charged ions.

The three dimensional crystallizing π-bonding orbitals are quantum-mechanically modeled by a cyclic Kronig-Penny Model and energy band structures are analyzed with their potential barrier thickness.

The waves generated between plus charged ions are the particular π-far infrared rays, which have dual properties between material and electro-magnetic waves and can be measured not by modern electro-magnetic tester but biosensor such as finger's force tester.

Because the π-rays can be modulated with electro-magnetic waves it can be applied for harmful electro-magnetic wave killers. Because the π-rays make new three dimensional crystallizing π-bonding orbitals in the material the food and drink can be transformed into a helpful physical constitutional property for human health.

Distinction between crystalline and amorphous metals is possible because very strong crystalline π-bonding orbitals can not easily be transformed into another. The π-rays can also be applied for biofunctional diagnostics and therapy. Gravitational field is one of the electro-magnetic fields. And also magnetic field and gravitational force field make charge's movement.

( $\vec{B} \times \vec{F} = q\vec{v}$ , $\vec{B}$ : magnetic field, $\vec{F}$ : force field, q: plus charge, $\vec{v}$ : velocity field )

## 1. CONVENTIONAL METALLIC BONDING AND THREE-DIMENSIONAL CRYSTALLIZING π-BONDING.

Conventional metallic bondings, which are both classical model and energy band model, are nondirectional because all the outer valence electrons of the atoms are shared commonly by all the positive - ion cores ( atoms without their valence electrons ). But Young's moduli of many metal crystals, which represent characteristics of bonding force, are very different according to the crystallographic directions. And also the metal crystals plastically deforms with preferable slip planes and twin planes. They have different metallographic crystal structures at different temperatures in the allotropic phase transformations.

It is remarkable as a phenomenal evidence of crystallographic directionality that the seed crystal in the liquid metal makes molten metal solidify in the same structure as itself. It is obvious that the conventional metallic bonding theory by electron gas clouds can not explain the systematic and regular crystallization.

The bonding in metal solids is not of the conventional energy - band model but is composed of the regular three-dimensional crystallizing π-bonding orbitals and normal conduction electrons move from one crystallizing π-bonding orbital to next one with a aid of electric potential field.

Semiconductors have base atoms of three-dimensional crystallizing π-bonding orbitals.

The conduction electrons are promoted from the covalent bondings to the π-bonding orbitals by thermal vibration energy.

The deficient atom sites in the three-dimensional crystallizing π-bonding orbitals make superconductable thrown out electrons, which are evidenced from the effects of Meissner, tunneling and Josephson. The increased numbers of NOEs in side chain residues about between proto-oncogenic and oncogenic forms of the new protein might be caused by a packing of the atoms, in which the atoms have remaining valence electrons and make three-dimensional crystallizing π-bonding orbitals.

The oriented magnetic dipoles of flowing water molecules by static magnetic flux in blood vessels make planar crystals of oxygen atoms by the crystallizing π-bonding, which produce periodic forces and activate water molecules. The catalytic action in chemical reaction is caused by the crystallizing π-bonding orbitals. Mechanical behaviors of metals (twins, dislocations, strain-hardening, mechanical properties of alloy metals, fatigue, creep, wear and uniaxial tensile deformation in polycrystalline metals) are very smartly explained by the three-dimensional crystallizing π-bondings.

Because all the mechanical properties of the metal are drived from the crystallizing π-bondings and uniaxial tensile test is loaded under the wide range of from elastic to fracture point, various mechanical test datas can be calculated from the datas of uniaxial tensile test CAMTS(computer

aided material testing system ) is the calculation system for engineering applications(ref.1,ref.2).

## 2. GENERATION OF π-FAR INFRARED RAYS FROM THREE-DIMENSIONAL CRYSTALLIZING π-BONDINGS.

The outer-most electrons of metal atoms and the remaining valence electrons of any molecular atoms make three-dimensional crystallizing π-bondings. The three dimensional crystallizing π-bondings have many kinds of the π bonding units as in Fig.1(ref.2).
The electrons on the π bonding orbitals rotate clockwise or counter-clockwise as in Fig.2 and they make electro-magnetic waves between atoms on the orbital because electrons move between plus charged ions. The one-dimensional Kronig-Penney Model is the simplified quantum mechanical model of the three dimensional crystallizing π-bonding orbitals(Fig.3)(ref.2). Fig.4 are the variation of energy band structure with potential barrier thickness(ref.3) and also the electro-magnetic binding mechanism of the crystallizing π-bonding orbitals. It can be remarked that the binding force field suggest the gravitational field. It is much wondered that gravitation field is one of the electro-magnetic fields.
Fig.5 and Fig.6 are the crystallized simple cubic and face centered cubic structure of the three-dimensional crystallizing π-bonding orbitals. But many solid state structures are going on crystallizing with the π-bonding orbitals as in Fig.1(c). It can be verified in Fig.7 that the produced electro-magnetic waves have dual properties between material wave and electro-magnetic wave and they have particular forms of π-far infrared rays as in Fig.2.

## 3. THEORETICAL DUAL PROPERTIES BETWEEN MATERIAL AND ELECTRO-MAGNETIC WAVES

As in Fig.8 π-far infrared rays make a π-electron rotating orbital, which reproduce the following same orbitals along the solid bar. The π-far infrared rays propagate like electro-magnetic wave in the space and advance like material wave in the material.

## 4. EVIDENCE OF DUAL PROPERTIES

### 4-1. HEALTH VITAL RING AND BRACELET

Health vital ring and bracelet is used for improving human physical constitution. The π-far infrared rays from the particular chinese medical plants pass through the silver material ring and bracelet from the enclosed cavity. This means that the π-rays propagate metal material and

space cavity. The π-rays also pass through concrete wall very easily.
The π-rays can not be sensed by the electro-magnetic wave antenna because they pass through the material of the antenna. The π-rays must be measured by the human sensors as the O ring test or the finger's force tester. In these study all the experiments are done by the finger's force tester.

## 4-2. HARMFUL ELECTRO-MAGNETIC WAVE KILLERS

Because the π-rays have electro-magnetic wave property, they are modulated with the harmful electro-magnetic waves from personal computer or TV. The personal computer's operators and TV audience receive modulated far infrared rays favorable to the health as in Fig .13.

## 5. MATERIAL STRUCTURE TRANSFORMATION BY π-FAR INFRARED RAYS

The O ring test measures human constitutional preference of food and drink. Any kind of food and drink can be transformed to preferable ones to any human constitution if the food and drink are exposed to the π-rays of the health ceramic ware (Fig.14) or a set of silver spoon and chopsticks (Fig.15).
This means that new three dimensional crystallizing π-bonding orbitals are formed in the food and drink by the π rays of the ceramic wave or the set of silver spoon and chopsticks. Wide ranges of the three dimensional crystallizing π-bonding orbitals of the human physical constitutions are consistent with those of health ceramic wave and chinese medical plants within the silver spoon and chopsticks. It suggests that magnetic field and gravitational force field make charge's movement ( $\vec{B} \times \vec{F} = q\vec{v}$ ).

## 6. DISTINCTION BETWEEN CRYSTALLINE AND AMORPHOUS METAL BY THE π-FAR INFRARED RAYS

In the case of crystalline metals material structure transformation by the π-far infrared rays is not easy because the crystalline π-bonding are very strong. But the amorphous metals can be easily transformed because the three dimensional crystallizing π-bonding are weak and unstable.
Metal surfaces are easily transformed because many free electrons exist on them. Table 1 shows the transformations.

| | Before Transformation | Metal Surface | Metal Inner Part |
|---|---|---|---|
| Stainless Steel (Crystalline) | 30 | 32 | 30 |

| | | | |
|---|---|---|---|
| Brass (Crystalline) | 30 | 32 | 30 |
| $Cu_{52.5}$ $Ni_{22.5}$ $Si_{10}$ $B_{15}$ (Amorphous) | 30 | 32 | 32 |
| $Fe_{88}$ $Zr_7$ $B_4$ $Cu_1$ (Amorphous) | 30 | 32 | 32 |

Table 1. Finger's force test of metal's transformation by health silver ring of Chinese medical plants(metal inner parts are obtained after the metal surface are washed by water)

## 7. BIOFUNCTIONAL DIAGNOSTICS AND THERAPY

The π-far infrared rays make three dimensional crystallizing π-bonding electron orbitals. If a conducting wire is connected between two same material as in Fig.16, a current flow is produced because of potential difference. This can be applied for biofunctional diagnostics, for example such as Meridian(Fig.17).

The π-far infrared rays make new three dimensional crystallizing π-bonding orbitals and do physical constitutional transformation. This is applied for curing abnormal biofunctional part of the human body. These facts suggest that the brain waves are the π-far infrared rays and the human body is operated by the rays.

In the case of cancer cell the α-helical polypeptide structures of the receptors in liquid state are packed by remaining valence electrons of nitrogen and oxygen atoms, which produce abnormal trans-membrane signal and pull any kinase without ligand-induced conformational change by the bonding attraction force and are proved by the NMR results(Fig.18 and Fig.19).

It can be anticipated for curing cancer cell that the abnormal trans-membrane signal may be disappeared by transforming the oncogenic three dimensional crystallizing π-bonding electron orbitals with the π-far infrared rays. Even the last stage of cancer nowadays is being cured by a particular Chinese medical method(ref.4). Author thinks that the method is from transforming the oncogenic abnormal signal by the particular strong π-far infrared rays. It can also be thought that a propagation and physiological function of the virus can be hindered by transforming the physical constitutional characteristics of it with the strong π-rays(ref.4).

The therapy of the oriental acupuncture is also using the material wave property of the π-rays.

## 8. CONCLUSIONS

(1) The rotating electrons on the three dimensional crystallizing π-bonding orbitals make a particular π-far infrared rays.

(2) The π-ray infrared rays have dual properties between material and electro-magnetic waves.

(3) The π-rays can be measured by biosensor, such as finger's force tester and it can not be measured by modern electro-magnetic tester because the π-rays are transformed into matter wave in the antenna material.

(4) Because the π-rays can be modulated with electro-magnetic waves it can be applied for harmful electro-magnetic wave killers.

(5) Because the π-rays make new three dimensional crystallizing π-bonding orbitals in the material the food and drink can be transformed into a helpful physical constitutional property for human health.

(6) Distinction between crystalline and amorphous metals is possible because very strong crystalline π-bonding orbitals can not easily transformed into another.

(7) The π-rays can be also applied for biofunctional diagnostics and therapy.

(8) Gravitation field is one of the electro-magnetic fields.

(9) Magnetic field and gravitational force field make charge's movement ( $\vec{B} \times \vec{F} = q\vec{v}$ ).

## REFERENCES


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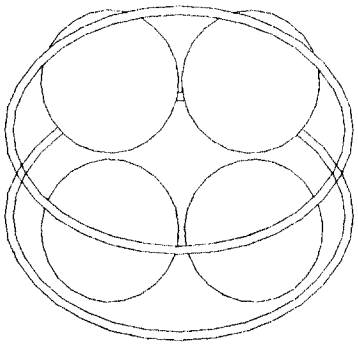
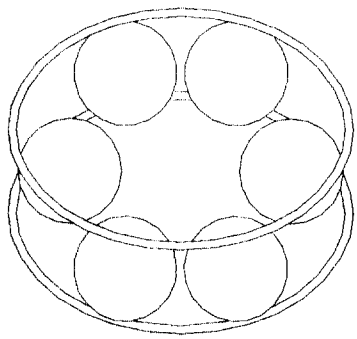
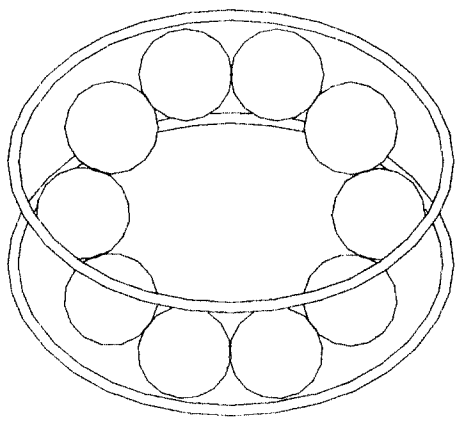


(a) crystallized square π unit



(b) crystallized hexagonal π unit



(c) crystallizing π unit

Fig.1 Three dimensional crystallizing π bonding unit.

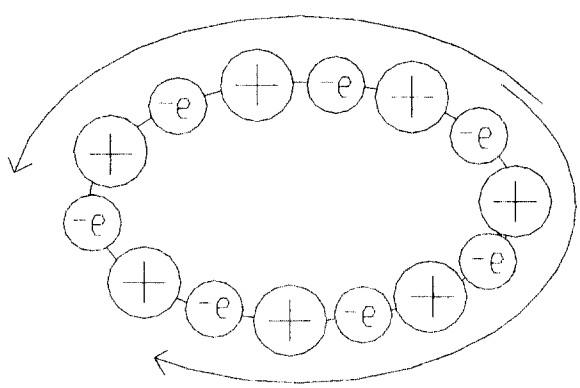



Fig.2 Electron's rotation on the π orbital and generation of π far-infrared rays.

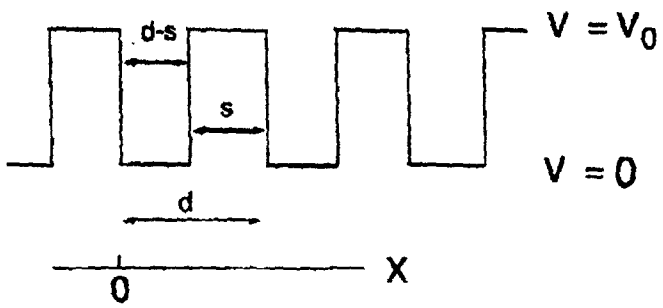
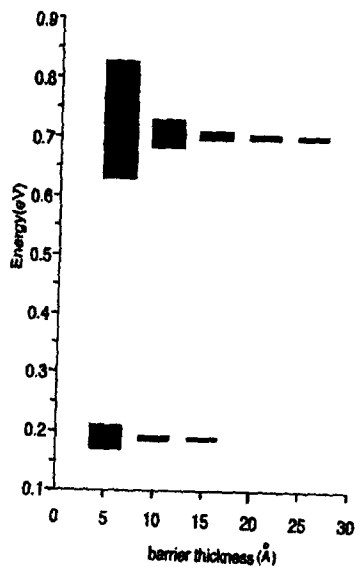
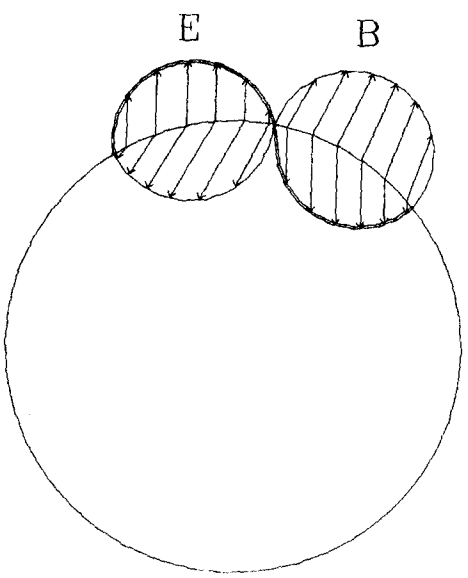



Fig.3 One dimensional Kronig-Penny Model.




(a)energy band




(b) π-far infrared ray

Fig.4 Energy Bands and π-far infrared ray.

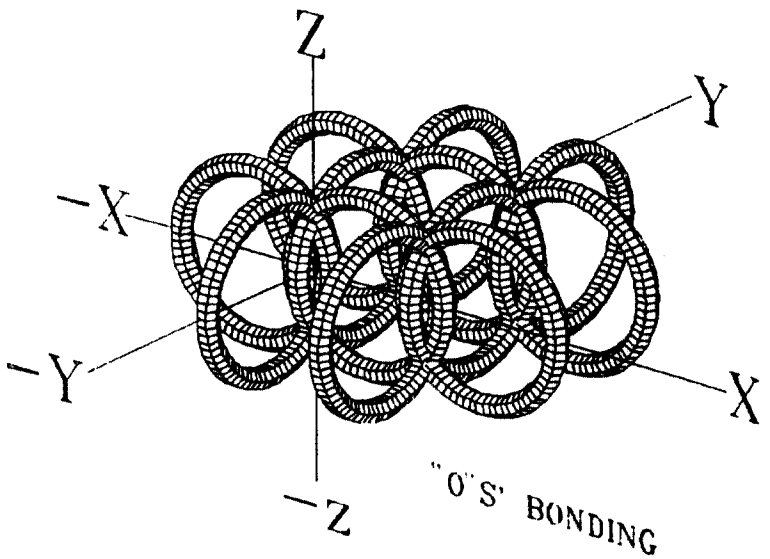



Fig.5 Simple cubic crystal structure of three dimensional crystallizing π- bonding orbitals.

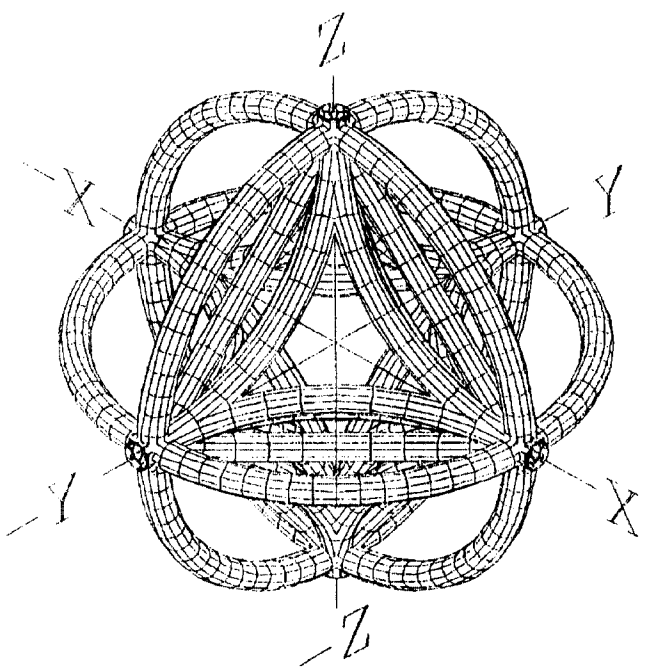



Fig.6 Face centered crystal structure of three dimensional crystallizing π-bonding orbitals.

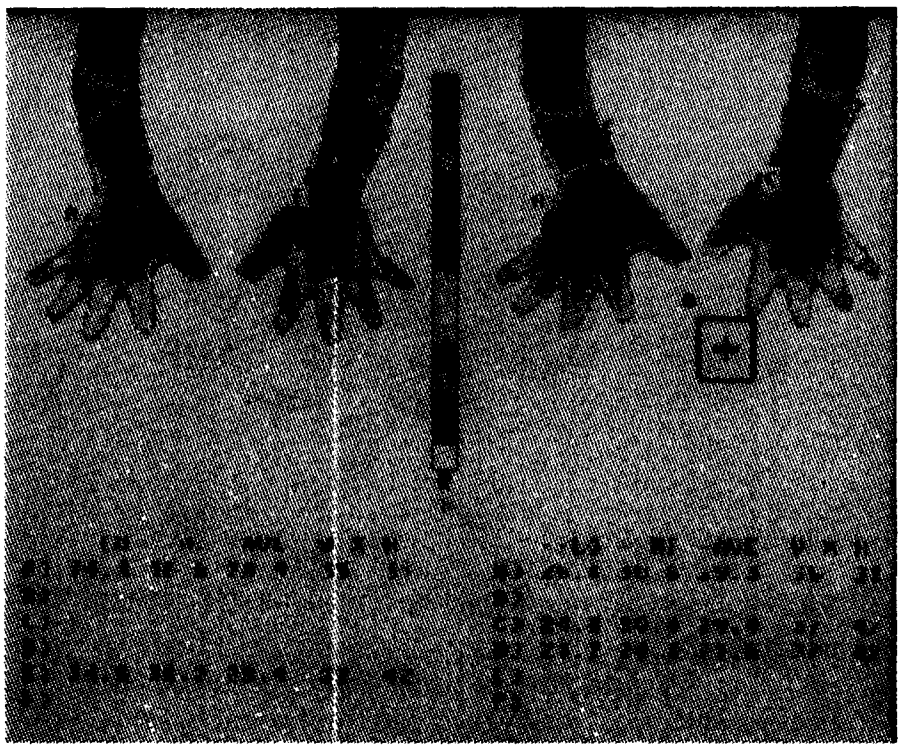


Fig.7 Effect of the π-far-infrared rays on the body by health vital ring (offered by JIN SOO PARK).

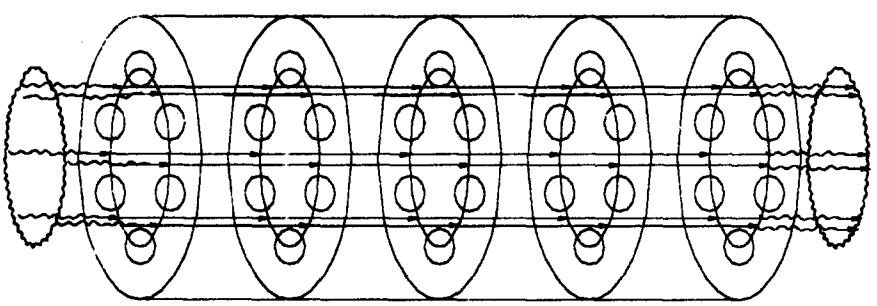


Fig.8 Dual properties between material and electro-magnetic waves.

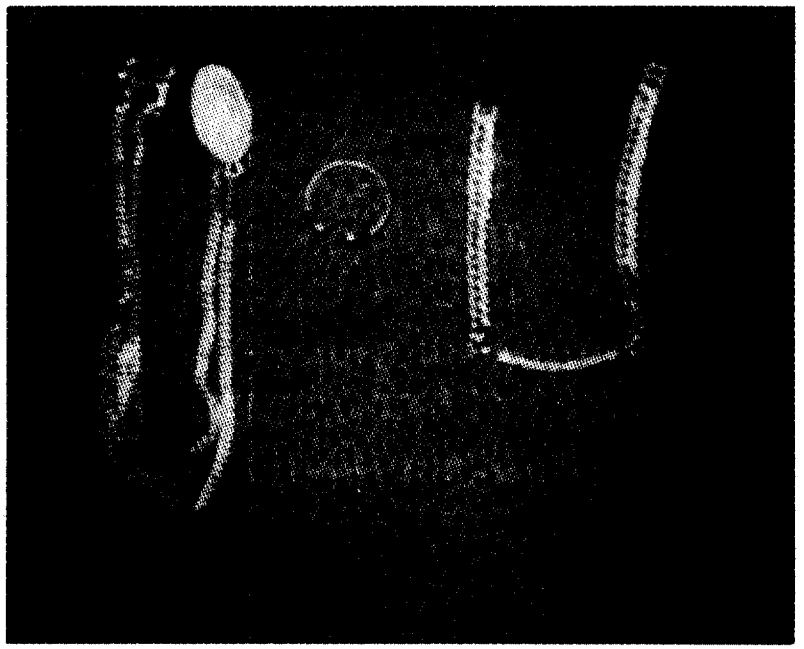


Fig.9 Health Vital Ring and Bracelet (offered by JIN SOO PARK).

Fig.10 Finger's force tester.

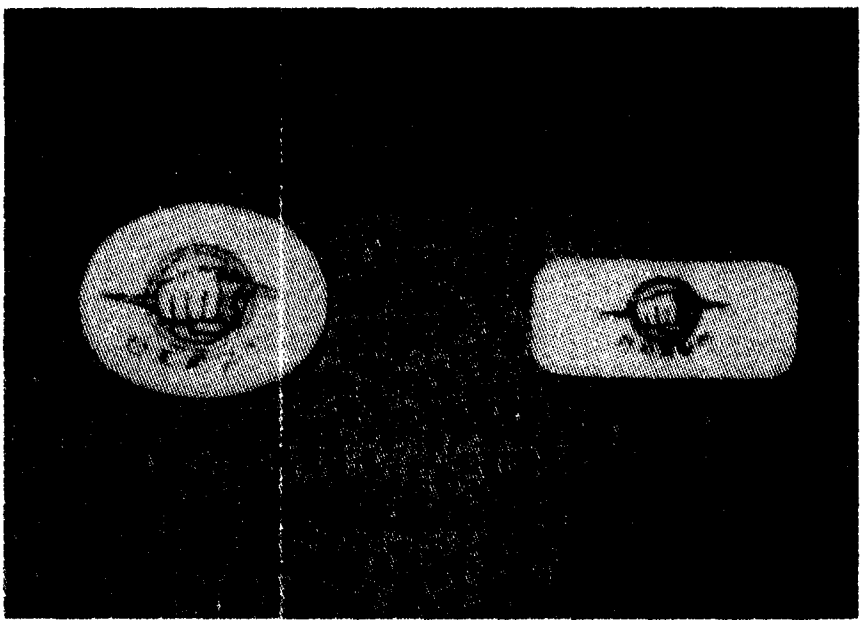


Fig.11 Ceramic harmful electro-magnetic wave killer (offered by JUNG ROK JUNG).

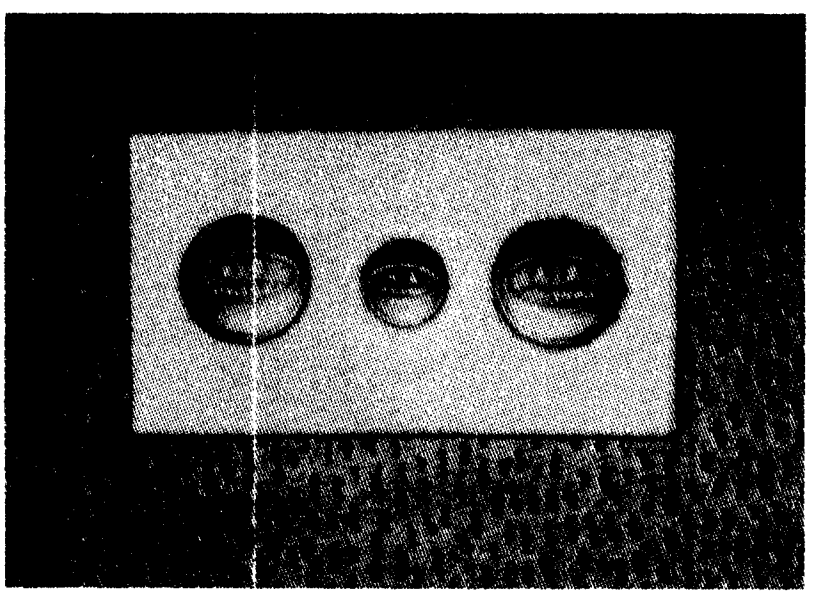


Fig.12 Chinese medical plant electro-magnetic wave killer (BOOSTER) (offered by JIN SOO PARK).

| | | TV | Personal Computer |
|---|---|---|---|
| WITH KILLER | Ceramic | 32 | 32 |
| | Chinese Medical Plant Booster | 32 | 32 |
| WITHOUT KILLER | | 30 | 30 |

Fig.13. Finger force Test for TV and Personal Computer

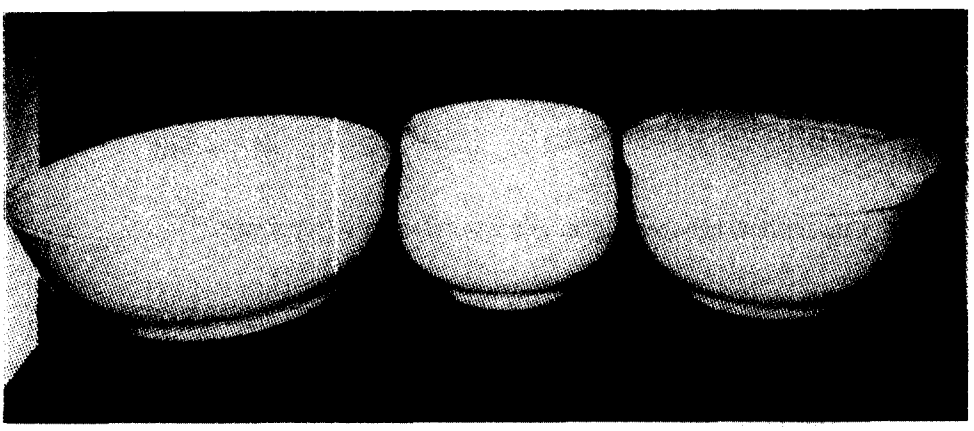


Fig.14 Health ceramic wave (offered by JUNG ROK JUNG).

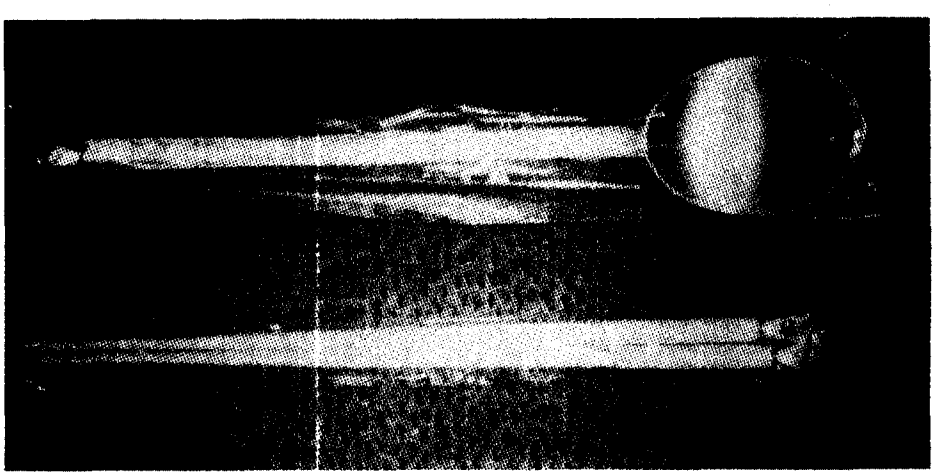


Fig.15 Health silver spoon and chopsticks (offered by JIN SOO PARK).

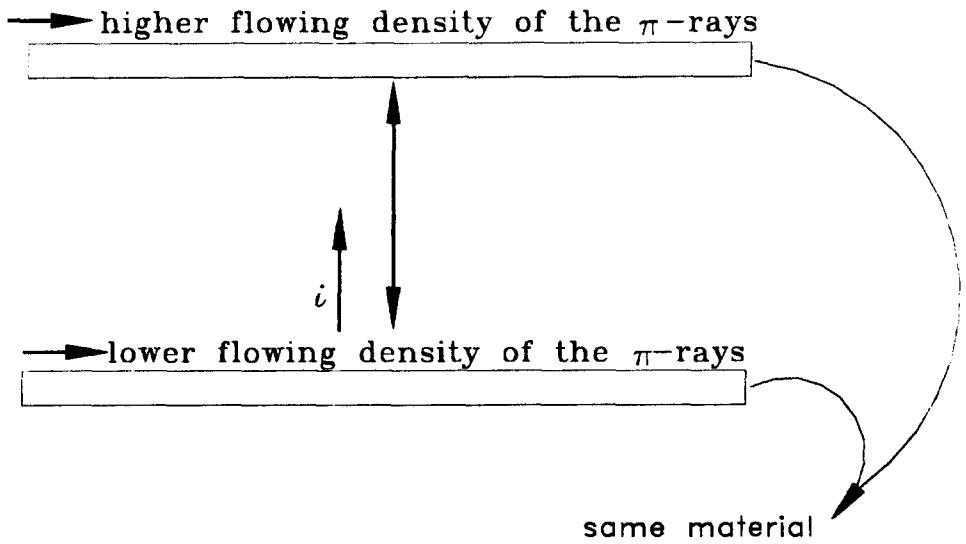



Fig.16 Current flow between higher and lower density of the π-rays.

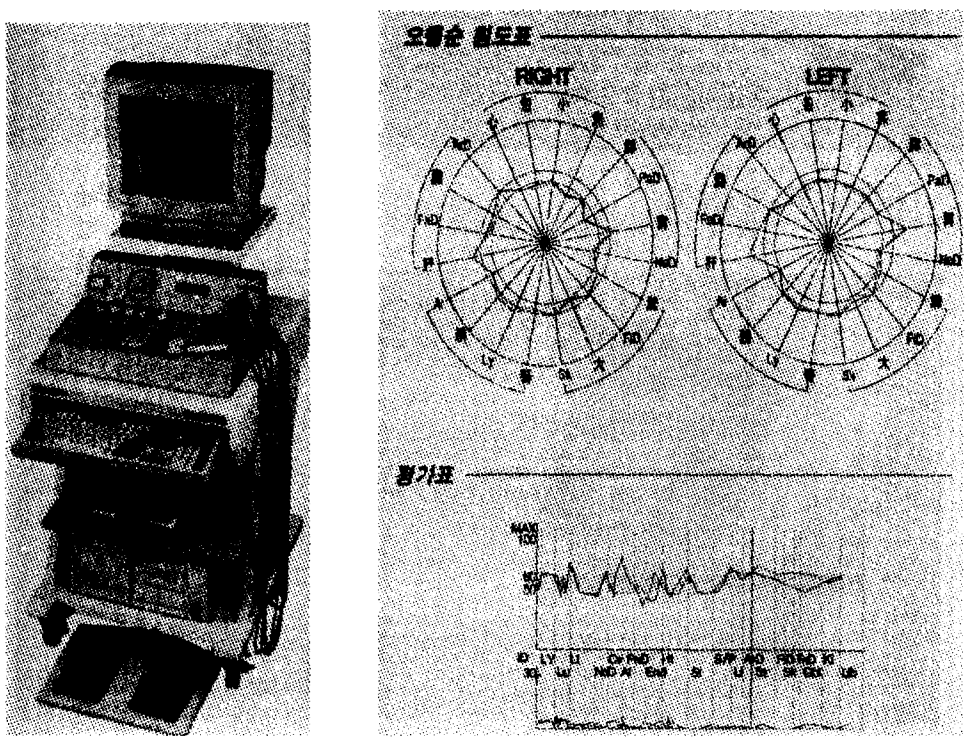



Fig.17 Meridian. (offered by MERIDIAN CO.)

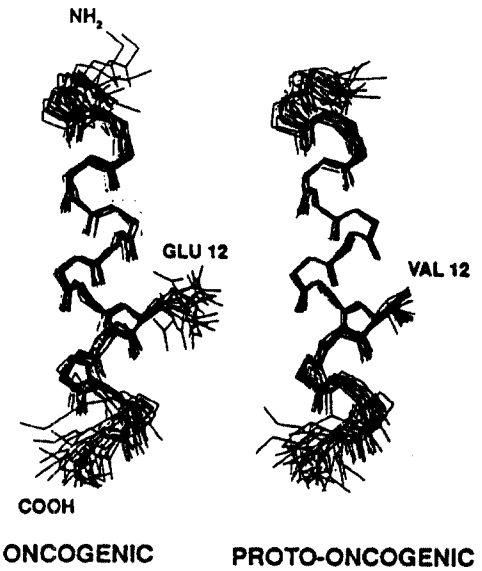



Fig.18 22 proto oncogenic and 22 oncogenic.

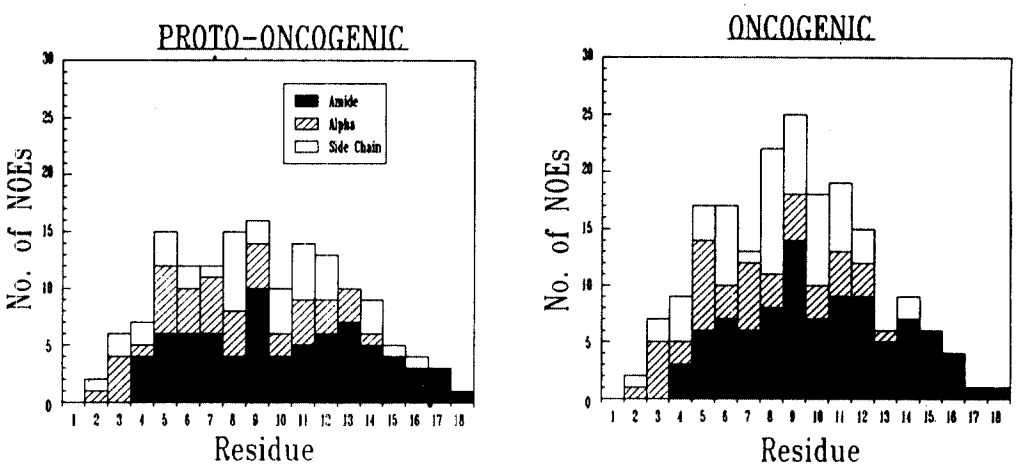



Fig.19 Distribution of NOEs used in structure calculations. Each atom involved in an NOE is indicated : for example an αH-NH restraint is recorded for both the α and the amide proton.