

The stationary generator allows you to reproduce EMP with horizontal polarization of the electric field. It includes a high-voltage electrical pulse generator (4 MV), a symmetrical dipole radiating antenna on two masts, and an open concrete test site. The installation provides for the formation of an EMP over the test site (at heights of 3 and 10 m) with a field strength equal to 35 and 50 kV / m, respectively.

Mobile (Transportable) generator HPDII is designed to simulate horizontally polarized EMP. It includes a high-voltage pulse generator and dipole antenna mounted on the trailer platform, as well as data collection and processing equipment housed in a separate van.

The current state of the EMP problem can be assessed as follows. The mechanisms of EMP generation and the parameters of its damaging effect have been sufficiently well studied theoretically and experimentally confirmed. Equipment security standards have been developed and effective protection means are known. However, to achieve sufficient confidence in the reliability of protection of systems and facilities from EMP, it is necessary to carry out tests using a simulator. As for the full-scale testing of communication and control systems, this task is unlikely to be solved in the foreseeable future.

References

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BOND TYPE AND CHEMICAL PROPERTIES

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A chemical bond is a set of forces acting between atoms that bind them into stable structures, the electron-nuclear interaction of atoms Associate with the restructuring of their electronic structures and the release of energy.

Valence electrons - electrons participating in the formation of a chemical bond.
Types of chemical bond:

1. Covalent bond (Covalent non-polar and polar bond)
2. Ionic bond
3. Metallic bond
4. Hydrogen bond

1. Covalent bond - a chemical bond formed by the overlap of a pair of valence electron clouds.

If there is one common electron pair between two atoms, then such a bond is called single (ordinary), if two - double, if three - triple. There are two mechanisms for the formation of a covalent bond: the exchange mechanism and the donor-acceptor mechanism:

- Exchange mechanism

In the exchange mechanism for the formation of a common electron pair, two bonding atoms provide one unpaired electron each. This is exactly what happens, for example, when a hydrogen molecule is formed.

- Donor-acceptor mechanism

In the donor-acceptor mechanism, a common electron pair is represented by one of the bonding atoms, the one that is more electronegative. The second atom represents a free orbital for the common electron pair, thus forming the ammonium ion NH_4^+ . This positively charged ion (cation) is formed when ammonia gas interacts with any acid. In an acid solution, there are hydrogen cations (protons), which in a hydrogen medium form the hydronium cation H_3O^+ . A covalent bond can be non-polar-between two atoms with the same electronegativity, that is, in simple substances, and polar - between atoms whose electronegativity is different, that is, in complex substances.

2. Ionic bond-a chemical bond between unlike ions, due to their electrostatic attraction. Ions are particles with a charge, into which atoms turn in the process of giving or receiving electrons. Moreover it can be considered the limiting case of a covalent bond, when the difference in the electronegativities of the bonded atoms is so great that a complete separation of charges occurs.

3. Metallic bond-chemical bond, between atoms in a metal crystal. Metallic bond is described with regard by many physical properties of metals, such as strength, plasticity, thermal conductivity, electrical resistivity and conductivity, opacity and gloss.

4. Hydrogen bond-bond, formed between a hydrogen atom that is already bonded to an atom with high electronegativity and another electronegative atom. According to the hydrogen atom, being bound to one electronegative atom, lacks electron density and is attracted to the second electronegative atom, which is rich in electrons. Usually the hydrogen bond is denoted as follows: $\text{D} - \text{H} \cdots \text{A}$. The atom "D" bonded to hydrogen by a covalent chemical bond is called the donor of the hydrogen bond, and the atom "A" is called the acceptor of the hydrogen bond.

It can be concluded that chemical bonds have different characteristics and properties.

WHAT IS GENETIC ENGINEERING

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Genetic engineering refers to the direct manipulation of DNA to alter an organism's characteristics (phenotype) in a particular way.

What is genetic engineering? Genetic engineering, sometimes called genetic modification, is the process of altering the DNA in an organism's genome.

This may mean changing one base pair (A-T or C-G), deleting a whole region of DNA, or introducing an additional copy of a gene. It may also mean extracting