



IEM Nova

Abstract

**A new paradigm in semiconductor and computer
technology**

Magnetronics[®]

**Author / Inventor: © ® Heinz V. Wenz,
Frankfurt, 06.02.2010**

Magnetronics is a completely new technology / discipline in the fields of electromagnetic R & D, production, marketing and associated applications.

Heinz V. Wenz, Owner IEM Nova
Frankfurt • Messeturm, 25th floor
Friedrich-Ebert-Anlage 49, 60308 Frankfurt
Postfach 170410, 60078 Frankfurt
Phone: +49 (0) 69 50956 5656 • Facsimile: +49 (0) 69 50956 5520 • Mobile: +49 (0) 172 47 53 189
E-mail: iem-nova@web.de

Comparison of technologies

Majority-particles: Electrons
= Charge carrier
Electrical engineering
Electronics

Majority-particles: Magnetrons
= Magnetization carrier
Magnetic engineering
Magnetronics

Particles and quanta

Up until now, in the field of electrical engineering and electronics, electrons have flowed as a charge carrier in the conduction band and electron holes as an electrical current. This current flow generates a lot of heat if the charge carriers collide with the lattice atoms of the conductor / semiconductor crystal. This also entails a great loss of energy.

The M conductors, M semiconductors and M insulators are divided up into magnetics and di-magnetics, wherein all crystalline and amorphous materials belong to the ferric group (incl. ferrous materials): Fe, Co, Ni and the lanthanides Gd, Tb, Dy, Ho, Er.

In magnetronics, the following particles and quanta are effective:

- a) Magnetic fluid quanta Φ_0 as energy field quanta of the magn. field.
- b) Magnetons are local electron-related moments of spin which are fixed in the atom, mostly on the 3d-shell; the Bohrsche Magneton *quantity* is derived from this as the outward, effective atom-related moments of spin (other magn. moments, e.g. trajectory and nuclear moment, are negligible). There are also magneton holes = missing moments of spin. They behave in a similar way to positive magnetic particles in the sea of negative magnetons.
- c) Magnetrons = Bonding and magneton holes = bondings holes. The latter behave like positive quanta and flow as a magnetic current I_m or flow Φ through the solid body.

M non-conductors and M semiconductors

There are relative and absolute magnetic zero levels which alternatively, can be used as a magnetic non conductor (M basic crystal) – in the same as silicon in the case of electricity. Magnetic semiconductors are for example, cobalt and dysprosium, which are doped with foreign atoms, e.g. Co + Ni or Co + Fe. The Co semiconductor crystal behaves in the same way as silicon, in the case of electricity: The bondings between the valence electrons (3d) are unaffected, first the foreign atoms and an external magnetic field, and then heat are factors which cause the decisive behavior.

Using these M semiconductors, it is then possible to build M components with the same behavior e.g. M diodes, M transistors and M thyristors, etc. for

Heinz V. Wenz, Owner IEM Nova
Frankfurt • Messeturm, 25th floor
Friedrich-Ebert-Anlage 49, 60308 Frankfurt
Postfach 170410, 60078 Frankfurt
Phone: +49 (0) 69 50956 5656 • Facsimile: +49 (0) 69 50956 5520 • Mobile: +49 (0) 172 47 53 189
E-mail: iem-nova@web.de

performance magnetronics (e.g. M IGTB).

Application

As the flow of magnetrons generates *no heat* and, in addition, runs down with phase speed / group speed (speed of light in solid matter), these components can be produced both as a microstructure as well as a nanostructure. Scale: Nano in 10^9 volumes smaller than micro plus the advantage of short distances with regard to the signal processing time, e.g. in a nano-computer.

In addition, magnetronic components do not need any electrical current because:
a) a field force machine can be placed on the chip in micro and nanostructures as a current generator, to ensure in order the necessary supply of electrical energy, e.g. for magnetic field-generating active modular coils etc.

b) the magnetronics themselves, do not consume any electrical current.

It should be noted that the all magnetronics can also be applied with ferroelectric elements in the same way in the electrical field (in this case, the surface chargers are the polarizers).

Furthermore, superconducting M semiconductors are only mentioned here as a keyword.

Energy infrastructure: Energy generation, energy distribution and energy consumption

The **field force machine** means that around the world, the energy infrastructure and energy supply systems can be converted: Many systems would not need any electric current (e.g. only a moment of torque) and/or no constant supply of external primary energy (! autonomous systems).

In addition, **magnetronics** are indispensable elements as they can significantly reduce mankind's consumption of electricity.

The field force machine (= autonomous and permanent generation of electricity) and magnetic engineering (= reduction in the consumption of electrical energy) will totally re-orientate energy infrastructure in the world i.e. the generation, distribution and consumption of electricity.

As such, this paradigm-forming energy technology is connected with far-reaching consequences of such importance, that every effort is necessary in achieving it.

Heinz Wenz

<p>Heinz V. Wenz, Owner IEM Nova Frankfurt • Messeturm, 25th floor Friedrich-Ebert-Anlage 49, 60308 Frankfurt Postfach 170410, 60078 Frankfurt Phone: +49 (0) 69 50956 5656 • Facsimile: +49 (0) 69 50956 5520 • Mobile: +49 (0) 172 47 53 189 E-mail: iem-nova@web.de</p>
