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## **Wireless Transfer of Electricity**

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Each of us lives in an apartment, where there are a lot of electrical devices, which require a socket located nearby. Therefore, in almost every room there are at least 3-5 outlets. But this is not the worst thing. The wires stretch all over the room. Firstly, it does not look attractive, and secondly, we can knock against them, fall and be injured. Fortunately, this problem may be solved soon thanks to wireless transmission of electricity. This article is about how to implement such a solution.

Today, the magnetic resonance system (Coupled Magnetic Resonance System, CMRS) developed at the Massachusetts Institute of Technology in 2007 is considered the most promising energy transfer technology [1]. With its help it is possible to transmit electricity at a distance of 2 meters. For 12 years, nothing radically new has been invented in this field. The system had a lot of flaws, because of which it did not go into mass production: a complex device of coils, rather large sizes, high transmission frequency and high sensitivity to interference.

Scientists from South Korea were able to solve some of the problems. They created a resonating system of dipole coils (Dipole Coil Resonance System, DCRS). This system is able to transmit electricity at a distance of 5 meters. It is devoid of such a disadvantage as a large size: since the coils that are used have dimensions of 10x20x300 cm. Such coils can be embedded in one of the walls of the apartment.

The configuration of this device is shown in Figure 1.

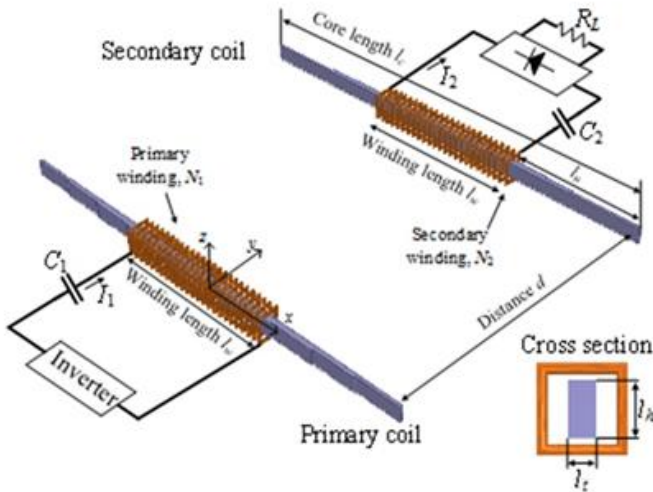


Fig. 1 – Configuration DCRS

A similar technology, but on a smaller scale, is used to charge batteries of portable devices such as laptops and cell phones, medical implants and electric vehicles [2].

In conclusion, it is necessary to say that the effectiveness of such an installation is rather small. But even with low efficiency, the technology can still be useful as it is quite convenient.

#### References:

1. Habr [Electronic resource]. – Mode of access: <https://habr.com/ru/post/219857>. – Date of access: 13.04.2019.
2. Wikipedia The Free Encyclopedia [Electronic resource]. – Mode of access: [https://en.wikipedia.org/wiki/Wireless\\_power\\_transfer](https://en.wikipedia.org/wiki/Wireless_power_transfer). – Date of access: 17.04.2019.