ELECTRONICS

New Conducting Plastics

➤ ELECTRICITY can be made to flow through any kind of plastic material in large or small amounts as desired, by a new development of the Naval Ordnance Laboratory at White Oak, Md., working with a New York scientist.

Plastics are ordinarily good insulators. They can now be made electrical conductors without affecting their strength and other desired properties, and will find greater service and use in military and industrial applications.

While details are being kept secret because of patents and military uses, both chemical composition and processing are involved in making the plastics electrically conducting.

The conducting plastics are being called Markites, and Dr. Myron Coler, professor at New York University and representative of the Markite Company, New York, invented and developed the process.

Electrically conducting plastics can be electroplated, an advantage wherever light weight is of importance.

Another application will be in making rheostats for changing resistance as desired. Rheostats must now be wound individually Using the new process, it may be possible to mold them, saving time and money.

Markites can be produced which have a conductivity ranging from that of an insulator to that of copper, one of the best conductors under ordinary conditions.

Until the development of these new plastics there have been few materials with a conductivity in the intermediate range.

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INVENTION

"Incendiary Tack" for War

➤ A SUPER-HOTFOOT treatment for the tires of enemy trucks, airplanes or what-have-you, invented during the recent war and available for the next one—if there has to be a next—has been disclosed via the U. S. Patent Office. Modestly titled an "incendiary tack" by its inventor, Herman J. Janney of the brightly named town of Opportunity, Wash., it will be recognized by any motorist who has ever pulled bits of wire or glass splinters out of his thinning treads as something more intimately fiendish even than germ warfare.

The general idea is to hide a sharp-pointed tack inside a thin shell of metal or plastic, and to surround it with a charge of something that will set fire to any tire that crunches down on it. In its simplest form, this would consist of a charge of thermit mixed with pitch or other sticky, inflammable stuff. This would not only burn a hole in the tire; it would scatter flaming bits backwards, forwards and upwards as the wheel whirled.

An even more devilishly ingenious variant suggested by the inventor would be to make the tack hollow, resting on a small container of gasoline. When struck, this would act like a hypodermic syringe, injecting the gasoline into the tire, to become an explosive mixture. Then, a few turns of the wheel later, a thin disk underneath would be worn through, exposing a concealed match-head charge to the scratching action of the road. The resulting blow-out had better be imagined than experienced.

These gentle contributions to the art of civilized warfare are intended to be planted by hand, or strewn from the rear of the last retreating jeep, or sprinkled from low-flying planes.

Mr. Janney was in the Army when he got this hot idea, so rights in his patent, No. 2,466,707, are assigned to the government. Naturally, he was a buck private when he thought of it; nothing so ingeniously "ornery" would occur to the High Brass.

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PHYSIOLOGY

Blood's "Police" Cells Surround Tantalum Metal

➤ TANTALUM, the non-irritating metal now much used for skull plates, permanent bone braces and other surgical purposes, is nevertheless treated as an alien substance by those vigilant policemen of the blood, the white corpuscles.

What happens when tantalum comes into intimate contact with living body tissue is graphically shown in a new motion picture film made by Dr. Carl C. Speidel, University of Virginia anatomist. Funds for the motion picture were granted by the American Cancer Society. The film received its first public showing April 13, at the meeting of the American Association of Anatomists in Philadelphia.

In making the film, Dr. Speidel used a technique which he has developed over a period of more than 15 years. An anesthetized tadpole is placed on the stage of a high-power microscope, and events in living tissue are studied and photographed in slow motion through its practically transparent tail.

Tantalum, in the form of sheets, fine wire and powder, was introduced into various tissues of the tadpole tail. Always its reception was the same. The white corpuscles hurried to the scene, and like human policemen forming a cordon in front of a crowd, they blocked off the metal from the rest of the tissues with a solid wall formed of their own bodies. Small isolated particles of tantalum powder are picked up and carried off through the circulation, but larger masses of the powder are walled off as if they were solid.

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Words in Science— MINIATURIZATION

➤ MINIATURIZATION is a big word which means, of course, making things smaller. Today, it is an important term in electronics, and particularly military research in electronics.

The idea is simply that space is precious on a military vehicle such as a ship or plane. Radio, radar and other equipment can take up a lot of space. By making them smaller much precious space is saved.

The Navy recently demonstrated how by redesigning, using new techniques and materials and dwarf parts, a radio set was built to take up only about one-fourth as much space as the same equipment had previously.

Miniaturization is now the watchword in military electronics design.

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