

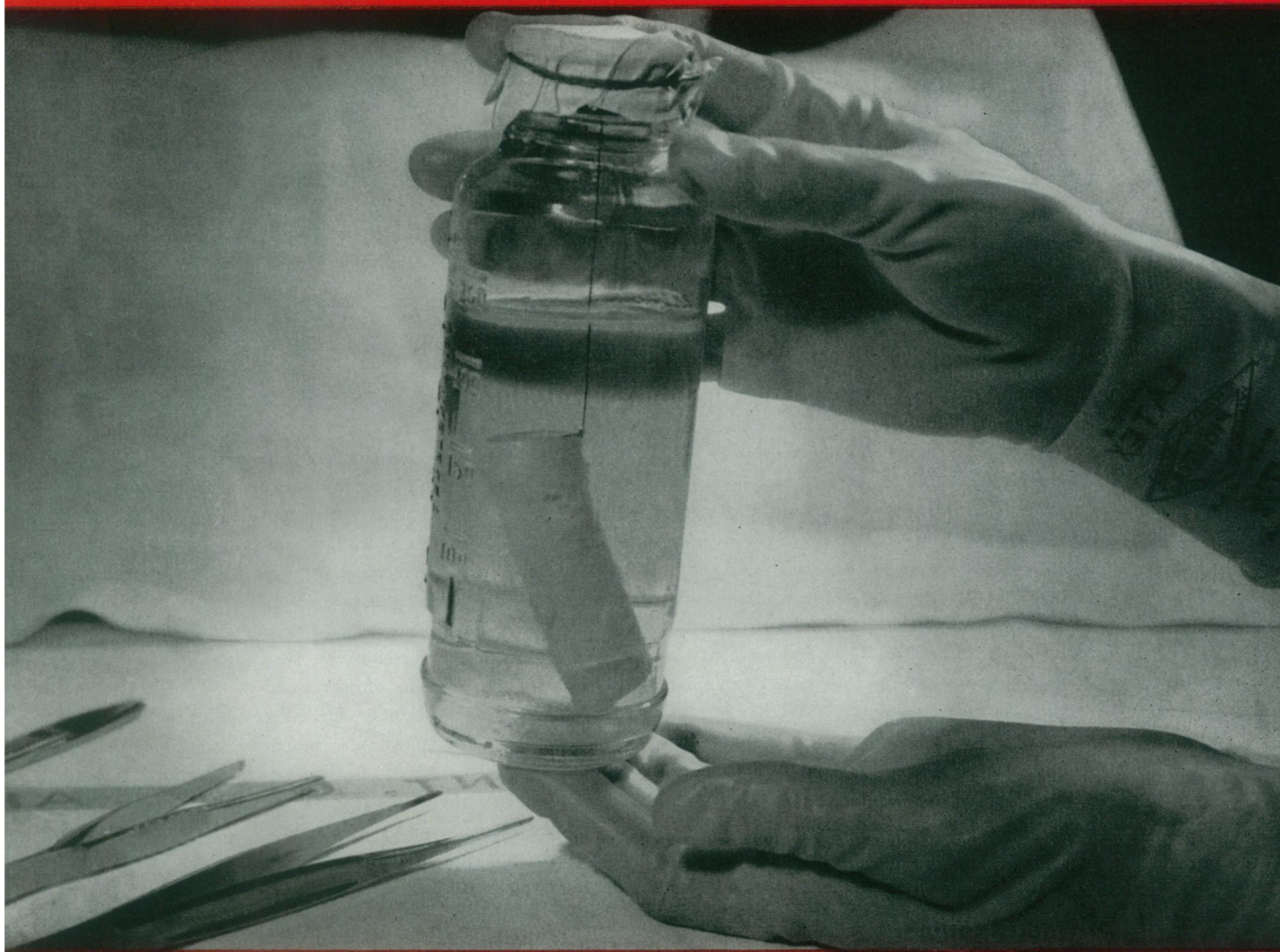
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Adventurers in Research..

Dr. Joseph Slepian

INVENTOR-SCIENTIST

One of the world's foremost authorities on the behavior and control of the electric arc. He left his job as mathematics instructor at Cornell University in 1916 to work as a coil winder in the Westinghouse East Pittsburgh, Pa., plant. But his brilliant handling of engineering problems won immediate attention. In 1922 he was named head of the general research section, four years later Research Consulting Engineer, and in 1938 was appointed Associate Director of the Research Laboratories.



His colleagues at the Westinghouse Research Laboratories say of Dr. Joseph Slepian that "he can look at an electric arc and see not fire and heat, but all of the atoms, ions, and molecules arranged in a neat mathematical formula". They also say that if you want to know anything about arcs, Slepian is your man.

Dr. Slepian's work with the electric arc hasn't remained in the realm of pure mathematics, however, for he combines with it a practical knack for invention that has produced some 225 patentable ideas thus far in his career. This prolific record has prompted one of his associates to remark that "if Dr. Slepian takes a pencil out during lunch, it's almost a sure bet another patent is in the making".

He developed the "De-ion®" circuit breaker and the "De-ion" protector tube, which have helped pave the way for transmission of power at higher voltages and for the greatly improved defense of power lines against lightning. To cite just one instance, before "De-ion" flashover protectors were installed on a 47-mile stretch of line in a western state, there were 46 interruptions a year because of lightning. Afterwards, interruptions averaged less than two a year.

Similarly, Dr. Slepian's study of arc behavior led to the devel-

opment of the Ignitron mercury-arc rectifier. Perfected in the 1930's, the Ignitron came into its own in 1940 when the requirements of aluminum production reached an all-time high. Now Ignitron installations provide the direct-current power for magnesium and aluminum plants the nation over. The Ignitron has also been adapted as the control element in electrical circuits that generate power for two of the nation's largest cyclotrons. And its most recent application is in the field of electrified locomotives, where it promises greater simplicity and economy of operation.

A keen and agile thinker, Dr. Slepian likes nothing better than to joust with younger researchers on scientific topics. One of his favorite hobbies is to devise plausible but impossible inventions and then challenge his colleagues to find the flaw.

Of the many honors bestowed on Dr. Slepian, nearly all have stressed the happy combination of pure science and practical inventiveness. It is the kind of combination that at Westinghouse has made for the continuous flow of new and improved equipment, while providing a fruitful source for the products of tomorrow. Westinghouse Electric Corporation, Pittsburgh, Pennsylvania.

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