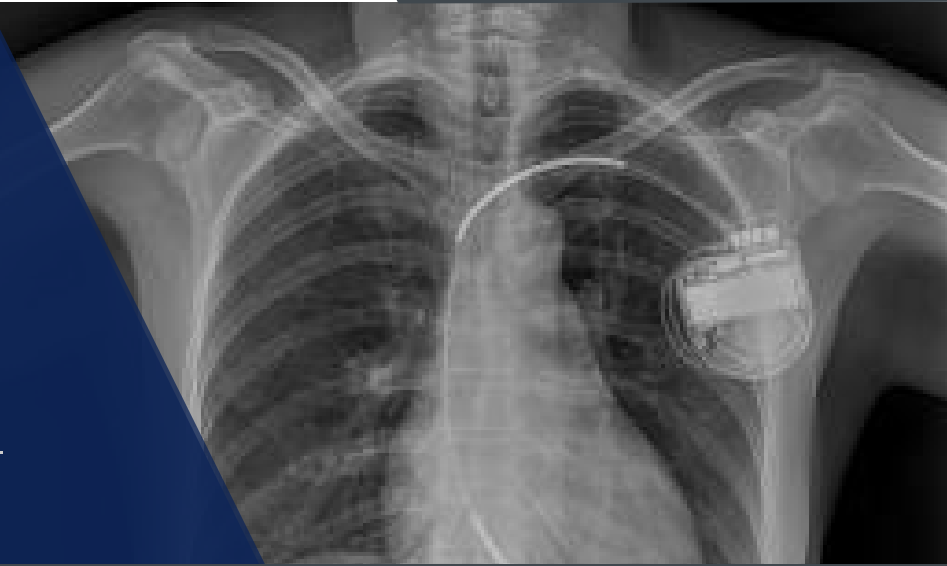


EFFECTIVE DRY LUBRICATION FOR BIOMEDICAL WIRE CONNECTIONS

Dicronite[®] was proven to meet all requirements for use in implanted electrical devices.



SITUATION

Medically implanted electrical devices improve and often extend lives. Engineers at Alfred E Mann Foundation for Scientific Research created a method of connecting biomedical wires that does not activate the body's natural defense system. The wires attach to implanted devices like sensors and stimulators. The method requires a sliding mechanism of two stainless steel parts. Since stainless steel is notorious for galling when rubbed against itself, the design requires a biocompatible lubricant.

RESULTS

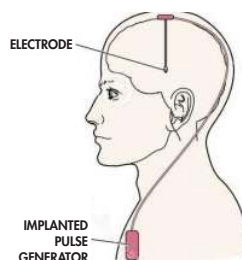
Because Dicronite[®] is biocompatible and meets the design requirements, it was selected as the lubricant for wire connectors. Dicronite[®] bonded to the substrate and formed a strong, thin film. Testing confirmed that Dicronite[®] resisted hydrolysis, tolerated exposure to high temperatures and remained stable during autoclaving. This method for connecting wires compatible with human implants was successfully patented by Alfred E Mann Foundation for Scientific Research.

REQUIREMENTS

In order to achieve their objectives, design engineers require a lubricant for wire connectors and crimpers that would:

- Not compromise the tolerances within a 1 mm electrode
- Allow for precision control of sliding components
- Adhere to materials used
- Prevent galling
- Provide long-term compatibility with the host such that tissue inflammation, cellular alteration, and other adverse reactions are avoided or minimized
- Not be susceptible to damage or deterioration due to chemicals, electrolytes, or other substances present in the human body

Deep Brain Stimulator



Dicronite[®] DL-5[®] was proven to be an effective dry film lubrication for biomedical wires implanted within the human body.