



Edge Finishing Surgical Blades using the FARADAYIC® Process

Objective:

This project demonstrated the feasibility of using the patented FARADAYIC® Process to remove a burr from a knife edge while maintaining its sharpness.

Summary:

The FARADAYIC® Process successfully removed the burr that existed on the blade edge. The processing time for a successful removal was only 2 seconds. The electrolyte for this process is a water based solution containing both sodium nitrate (NaNO_3) and sodium chloride (NaCl), the latter being essentially table salt.

Background:

The patented FARADAYIC® Process is an electrochemical manufacturing technique that utilizes a controlled electric field to either polish or shape a metallic work piece. Since the FARADAYIC® Process is electrically mediated, it does not require aggressive chemicals to facilitate the metal removal as needed in conventional chemical processes (e.g. chemical etching). The material removal rate is determined by the applied electric field, which is user-defined and computer controlled. This provides the means for precise control of the length of the process and the total material removed. Additionally, the use of neutral salt solutions (e.g. sodium chloride and sodium nitrate) as the electrolyte makes the process both worker and environmentally safe.

The FARADAYIC® Process technology illustrated above is protected by a substantial patent portfolio including issued, allowed, and pending patent actions.

