# 🔻 BSL: Braun–Stanley Layer Research Logbook

Field-Preserving Rectifying Layer | Experimental Research Log

Version 1.0 — Open Source / Public Domain

## 1. Project Overview

The Braun–Stanley Layer (BSL) is a field-preserving, directionally conductive junction formed on copper or copper-plated wire using sulfurization under DC current and heat. It enables embedded rectification within wire geometry while maintaining displacement-current compatibility, offering unique applications in high-voltage resonant systems.

## 2. Hypotheses & Research Questions

• Can a Cu₂S/CuS layer formed on copper-plated nichrome wire block reverse conduction while allowing field propagation?

• Will the layer retain rectifying behavior after enamel coating?

• Can field symmetry be preserved through the layer in a bifilar winding?

• Can this process be replicated consistently using torch + sulfur + DC bias?

## 3. Materials & Equipment

- Copper-plated Nichrome wire  
- DC power supply (adjustable voltage/current limited)  
- Sulfur powder (pure elemental sulfur)  
- Micro torch or heat source (450–600 °C)  
- Heat-resistant surface  
- Digital multimeter (with diode test)  
- Optional: Thermometer, enamel, microscope/lens

## 4. Experiment Log

Use this section to document individual BSL attempts.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Entry | Date | Wire Type | Voltage / Current | Sulfur Method | Heat Time | Fwd R | Rev R | Notes |

## 5. Visual Observations & Sketches

Paste photos, microscope images, sketches, or field diagrams below:

🔻 BSL Region Geometry:  
(Insert sketches of coil layout, junction site, etc.)

## 6. Public Domain Declaration

The Braun–Stanley Layer (BSL) and all related research herein are placed in the public domain by the contributor. You may freely use, reproduce, modify, and distribute this work without restriction.

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

Optional URL for sharing this contribution: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_