

Kirlian Photography

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What is Kirlian Photography?

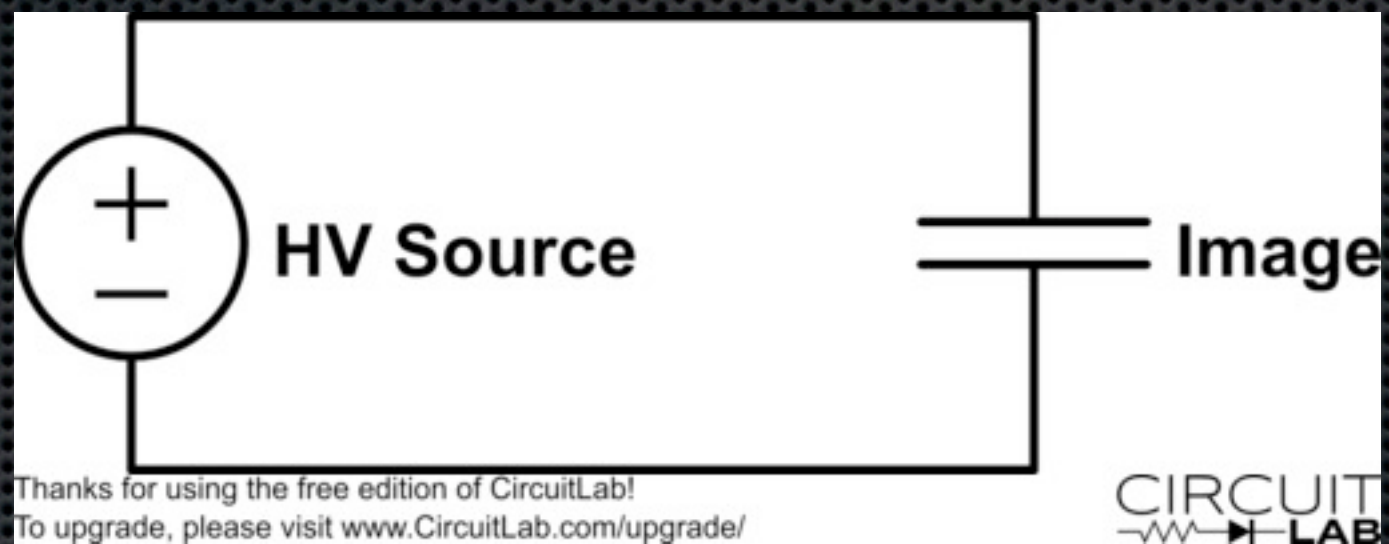
- ✦ Picture of the breakdown of a capacitor
- ✦ Created in late 1930's in Russia
- ✦ Remains relatively unknown today



Our Modifications

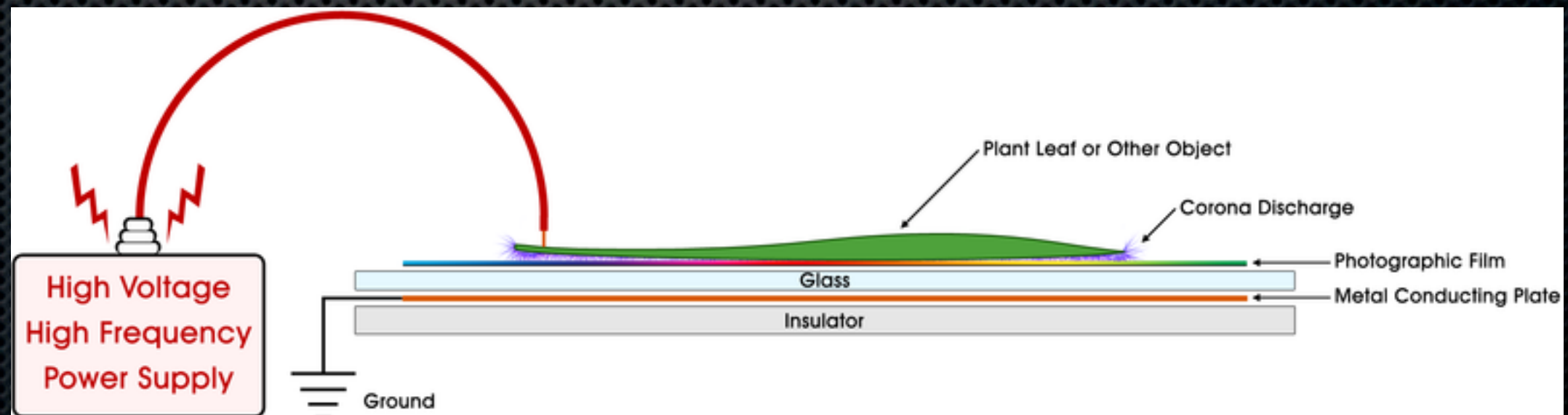
- ✦ Create a simpler setup
- ✦ Make setup easy to use in total darkness
- ✦ Allow for more artistic expression
- ✦ Allow pictures of living things
- ✦ Make the setup 100% safe

Circuit



Circuit

- ✦ Van de Graaff, Wimshurst or other High Voltage source
- ✦ Capacitor is metal sheet, plastic, and object
- ✦ Connect object to circuit ground if not living



User Friendly

- ✦ Total darkness and High voltage don't mix
- ✦ Masking tape - plastic, seethrough, and sticky.
- ✦ Simple pictures of leaves and flowers
- ✦ Be careful, lines can show up on final image

Color

- ✦ Electrical arcing
- ✦ Coronal Plasma discharge
- ✦ Demonstrates emission lines
- ✦ Setup using another gas?



Safety

- ✦ Completely safe
- ✦ Worst shock is that of a Van de Graaff
- ✦ Higher risk of arcing



Application in the Classroom

- ✦ Fun, creative and captivating conversation piece
- ✦ Great foundation for field theory
- ✦ Electrostatics is the first time the obscure is dealt with



Application in the Classroom

- ✦ Visually demonstrates complex, non-visual concepts
 - ✦ Faraday caging
 - ✦ Fields storing energy
 - ✦ Electric Potential



Disclaimer

- ✦ You can make this as complex or simple as you choose
 - ✦ Different gases
 - ✦ Portable unit
- ✦ Photographic paper or film is by no means required
- ✦ Taking pictures of people can be painful on occasion

How to

- ✦ Bottom plate of capacitor is a thin sheet of metal
 - ✦ Cookie sheets work great
- ✦ Dielectric
 - ✦ Glass plates
 - ✦ Binder separators
- ✦ Paper between dielectric and top plate
- ✦ Top plate is object to photograph

How to

- ✦ A darkroom is required with photographic paper
 - ✦ Tape black poster board over windows and doors
 - ✦ Safelight
- ✦ Connect plate to high voltage
- ✦ Connect object to circuit ground
 - ✦ Generally avoid with living things or people - will give a jolt
 - ✦ Might be required with lower voltages
- ✦ Play around with exposure time

Objects to Photograph

- ✦ Plants

- ✦ Leafs, flowers always look great

- ✦ Necklaces

- ✦ Demonstrates Faraday caging

- ✦ Coins and Keys

- ✦ The text on a coin or key can be read in the image!

- ✦ The more recognizable, the more dramatic

In Conclusion

- ✦ Safe way to demonstrate tricky concepts
- ✦ Fun to do in class
- ✦ Simple setup
- ✦ Truly creative art
- ✦ Awesome conversation piece