

e

e**ELECTRONS**

e**ELECTRICITY**

e**ENERGY**

Natural Method for **Stopping** and **Preventing** Wood Decay and Woodpeckers

Stopping and Preventing Wood Decay and Woodpeckers

Wood decay continues to be one of the primary economic problems restricting the use of wood poles in the utility industry today. While several wood treatment options are available, all have one thing in common, they all use **Pesticides** in an attempt to **KILL** the wood decay fungi and wood eating bacteria.

A natural approach is now available that combines essential oils and energy harvested from electromagnetic fields to stop and prevent wood decay **AND WOODPECKERS**. This technology has been used successfully for more than 30 years in repairing woodpecker holes as part of the **IPOLE-WPK**. During this time, thousands of woodpecker damaged poles have been repaired with **NO reports of decay continuing in the repaired holes**. All of this has been accomplished **without the use of Pesticides**.

Use of plant-based essential oils as natural wood preservatives can be traced back thousands of years. While their effectiveness in preventing wood decay is well documented, limited service life and longevity prevented their commercial application as a natural wood treatment. In 1997, the U.S. Forest Products Lab and University of Maine published a research report that concluded "**decay fungi require a Positive Charged Ion Environment to survive**".^[11,13] Researchers also found that certain essential oils, when used in combination with negative ions, stop wood decay^[14,15].

IPOLE's answer to stopping wood decay is to combine proven essential oils with harvested electromagnetic energy to create and sustain a **Negatively Charged Essential Oil Ion** field inside the wood.^[11,13,14,15] This is accomplished by the use of a patented **Electro-Static Activated Polymer** known as **E-SAP** that is incorporated in the **IPOLE-WPK System**.

WOODPECKER HOLE STRUCTURAL REPAIR

The **IPOLE-WPK Woodpecker Hole Structural Repair System** has been used successfully for more than 30 years to repair woodpecker damaged wood poles. During this time, there have been **NO Reported Failures** when applied according to the instructions. This patented **IPOLE-WPK process**^[1,2] not only repairs the damage, **it stops wood decay and prevents it from recurring**.

The **IPOLE-WPK** technology has been recognized as a unique and powerful tool for structurally repairing the woodpecker damage and protecting the wood against further decay. Since 1987, a number of patents have been issued by the U.S. Patent Office on this technology^[1,2,7,8]. Several products are now available that both structurally repair the damage and effectively stop and prevent wood decay.

The structural material used in the **IPOLE®** Repair System is a catalyst-cured, expanding, epoxy polymer concrete, trademarked **IFOAM®**. Incorporating the **E-SAP** technology, **IFOAM®** has been proven to restore the strength of the repaired wood pole section^[5] and stop the decay.^[47]

High strength fiberglass fibers used in the repair amplify **IPOLE's** strength. As **IFOAM** expands, fiberglass fibers are filtered out by the porous wood surrounding the hole. This filtering action deposits the fiberglass onto the inside walls of the hole, creating a high-strength interlocked fiberglass "liner" that's structurally bonded to the wood. **Without structural bond to the wood, a true structural repair is not possible.**^[1,2,4]

Natural Method for Stopping and Preventing Wood Decay and Woodpeckers

Full-Scale Tests

A number of U.S. utilities have reportedly run their own destructive tests on the **IPOLE-WPK** System. While the results of these tests went unpublished, in 2016, a group of Norwegian Power Companies (Companies that make up the Norwegian power grid) conducted and published the results of independent structural tests on the **IPOLE-WPK** System. These tests were conducted by REN AS and Live Work Consult AS at the Elektroutvikling AS facility in Norway. Their conclusion: "**The tests show that IFoam will provide an increase in strength by filling holes...**".^[5]

Drilling Resistance tests were also conducted that compared the strength properties of the **IPOLE-WPK** repair to that of the original wood. Their conclusion: "**The Drilling Resistance of IFOAM compares well to that of the wood itself**".^[6]

EMF, NEGATIVE IONS, AND ESSENTIAL OILS

E-SAP^[7] is a negatively charged, electrically insulating polymer that harvests energy from electromagnetic fields through the use of a combination of energy generating technologies. These include Galvanic Cells^[57], Triboelectrification^[58], Anionic Polymers^[7], and Photocatalysts^[36,37], all of which are used in the **E-SAP** electro-chemical reaction

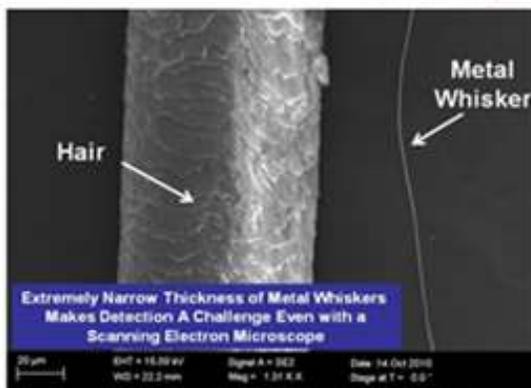
Generation of Negative Ions require both Energy and Oxygen. **E-SAP** gets its energy by harvesting Pulsed Electromagnetic Energy from a number of sources including Electrical Equipment and Power Lines, Cell Phones and Cell Phone Towers, and from the Body. **E-SAP** combines oxygen from plant-based essential oils^[11, 13,14] with electromagnetic energy to generate **Essential Oil Negative Ions**.

BREAKTHROUGH IN E-SAP ENERGY AMPLIFICATION

E-SAP uses dissimilar metals to inductively harvest energy from electric fields. Each cell contains active trace metals (tin, copper, zinc, titanium, lithium, and others) that have nano-size hair-like appendages, known as Metal Whiskers and Dendrites, growing outwardly from their surfaces^[42,51]. When exposed to Pulsed Electromagnetic Energy, these conductive appendages generate a low voltage corona discharge when exposed to an electromagnetic field. These microscopic discharges are used to stop wood decay.

Human Hair vs. Metal Whisker

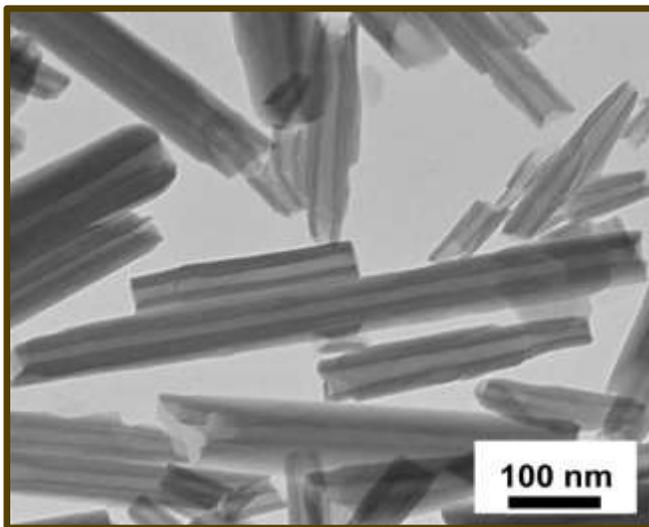
Metal Whiskers are commonly 1/10 to < 1/100 times thinner than a human hair!!!



Natural Method for Stopping and Preventing Wood Decay and Woodpeckers

In 2019, researchers at the University of Michigan published a series of articles that discussed the use of a process, known in the medical industry as a **Cold Plasma**, that also generate **Micro Shocks**. Cold Plasma generates “electrostatic micro charges that form around ionized, or charged, particles”^[16]. According to their research, Micro Shocks were used to reportedly “kill 99.9% of airborne viruses”^[17] E-SAP Energy Cells also generate Cold Plasma using a process known as a **Dielectric Barrier Discharge**,^[32] and what is referred to as a “*Packed Bed Non-Thermal Cold Plasma Reactor*”.^[16]

While E-SAP encapsulated particles have been used effectively for years to stop and prevent wood decay, their rounded shape was not optimal for generating micro shock pulses.^[16,18] Recent innovations in the use of tubular nanoparticles greatly improved their effectiveness.^[19]



IMPLEMENTATION OF NANO-SCALE RAILGUN TECHNOLOGY

Electromagnetic Railguns have been under development for more than 50 years. In general, a Railgun consist of two parallel conductive metal rails and non-explosive projectile, powered by a **Pulsed Electromagnetic Power Source**. When a burst of Pulsed Electric Energy is applied, an electromagnetic field is generated that accelerates the levitated projectile along the rails without friction. Published reports indicate that this projectile can attained speeds in excess of Mach 7, with a range more than 100 miles, and hit with enough energy to destroy a ship, without the use of an explosive warhead. **All of this accomplished by Harnessing the Power of Pulsed Electromagnetic Energy.**

The **IPOLE** System uses a nano-sized version of the Railgun to amplify Essential Oil Negative Ion energy.^[18,20] Continuously powered by the E-SAP harvested Pulsed Electromagnetic Energy, this technology represents a powerful tool for use in protecting wood against decay.

Pole Top Rot continues to be a problem for operating utilities. It has only been since the use of drones and helicopters for power line inspection that the true extent of this problem has been recognized. With terrain access and speed of repair being major cost factors, **IPOLE Pole Capping** products have now been made available for use in helicopter installation.^[21]

Natural Method for **Stopping** and **Preventing** Wood Decay and Woodpeckers

WOODPECKERS – STOP THE DECAY, STOP THE WOODPECKER

Woodpeckers feed on insects found in diseased, dying, or rotting trees. With their tongues coated with a layer of sticky saliva^[24], wood decay spores can be transferred from the decayed wood into new foraging holes or peck-outs. Foraging holes continue to get larger with time as woodpeckers continue to forage for food. Stopping woodpecker activity is simple, **STOP THE DECAY, STOP THE WOODPECKER**. **IPOLE** Wood Pole Paints containing patented **E-SAP** Energy Cells, have proven effective in deterring woodpeckers, and are available for use in brushable, sprayable, and aerosol applications.^[22]

In 2003, the USDA National Wildlife Research Center (NWRC) conducted a series of controlled tests of **IPOLE** wood coating products as part of a project called “Evaluation of IStop Cribbing and Chewing Deterrent Product to Reduce Pileated Woodpecker Damage to Utility Poles”. Of the **IPOLE** coatings tested (product then called IStop), **ONLY** the coating containing micro shock-generating Essential Oil Negative Ion Energy Cells was reported to **DECREASE WOODPECKER ACTIVITY BY 97%** by the NWRC.^[25,26,27]

The above White Paper describes the research that went into development of the **IPOLE**, **IFOAM**, and **Sniff’n’Stop** technologies over the past 35+ years. The following is a DropBox link to the documents referenced in this White Paper:

<https://www.dropbox.com/sh/xiwj5w4cs6642vu/AABi0lzhQ4l1JrgSlbjDiYvVa?dl=0>

ICORP-IFOAM Specialty Products Corporation is committed to making this important technology available throughout the Industry.

Please contact us if you have any questions.

ICORP-IFOAM Specialty Products Corp.
www.SNIFFNSTOP.COM

Natural Method for Stopping and Preventing Wood Decay and Woodpeckers

References:

- [1] DropBox link "*System for strengthening structural elements; US Patent #4905441*"; 1990.
- [2] DropBox link "*Method of strengthening a structural element; US Patent #5245812*", 1993.
- [3] DropBox link "*Olfactory Receptor*", 2020
- [4] DropBox link "*ESMO Paper IPOLE-WPK Woodpecker Hole Repair and IPOLE-WPK Woodpecker Detering Systems*", 2003.
- [5] DropBox link "*IFOAM Wood Pole Mechanical Test Report.pdf*, 2016.
- [6] DropBox link to slide, "*IPOLE-WPK Drilling Resistance Measurements.pdf*".
- [7] DropBox link "*Method of encapsulating a volatile liquid; US Patent #6596204*", 2003.
- [8] DropBox link "*Method for treating and preserving wood; US Patent #10045528*", 2018.
- [9] DropBox link "*Inactivation of airborne viruses using a packed bed non-thermal plasma reactor*", 2019
- [10] DropBox link "*Killing Dangerous Super Viruses With Cold Plasma*", 2019
- [11] DropBox link "*Inhibitory Effect of Essential Oils on Decay Fungi and Mold Growth on Wood*", 2007.
- [12] DropBox link "*Negative Air Ions and Their Effects on Human Health and Air Quality Improvement*", 2018.
- [13] DropBox link "*Role of Cations in the Biodegradation of Wood*", 1997.
- [14] DropBox link "*Relationship of Cinnamaldehyde Compounds against Wood-Decaying Fungi*", 2016.
- [15] DropBox link "*Antimicrobial Effect of Clove and Lemongrass Oils against Staphylococcus aureus*", 2012.
- [16] DropBox link "*Cold Plasma Inactivation of Airborne Viruses*", 2019.
- [17] DropBox link "*Cold plasma can kill 99.9% of airborne viruses -- ScienceDaily*", 2019.
- [18] DropBox link "*E-SAP Particles Photographs*", 2018
- [19] DropBox link "*E-SAP Particles vs. Nanotubes.pdf*", 2020.
- [20] DropBox link "*E-SAP Particles and Nanotubes Emulate Railgun Technology*", 2019
- [21] DropBox link "*IPOLE-CAP Helicopter Installation Slide*", 2019
- [22] DropBox link "*DropBox link 'Method of deterring woodpeckers; US Patent #6576673'*", 2003.
- [23] DropBox link "*Method and composition of disrupting feeding patterns of woodpeckers; US Patent #6749862*", 2004.
- [24] DropBox link "*The Woodpecker's Incredible Tongue*",
- [25] DropBox link "*NWRC's Sniff'n'Stop Abstract*", 2004
- [26] DropBox link "*NWRC's Sniff'n'Stop Final Report*", 2004
- [27] DropBox link "*NWRC Sniff'n'Stop Evaluation Poster*", 2004
- [28] DropBox link "*Isolated Compounds from Essential Oils*", 2011.
- [29] DropBox link "*A Review on Essential Oils Supporting the Immune System*", 2019.
- [30] DropBox link "*Can Negative Ions Combat the Coronavirus?*", 2020.
- [31] DropBox link "*Magnetic Ion Sputtering Cold Plasma Sterilization*", 2019
- [32] DropBox link "*Low Temperature Plasma Applications*", 2020.
- [33] DropBox link "*Electromigration*", 2020.
- [34] DropBox link "*Railgun - Designed for Use as a Weapon*", 2020.
- [35] DropBox link "*The Metal Whiskering Phenomenon*", 2020.
- [36] DropBox link "*Photocatalytic Nanoparticles*", 2018.
- [37] DropBox link "*Photocatalyst Metal Oxides*", 2017.
- [38] DropBox link "*Positively Charge Respiratory Systems*", 2020.
- [39] DropBox link "*Olfactory Receptors*", 2020.
- [40] DropBox link "*Johns Hopkins Hospital Update*", 2020.
- [41] DropBox link "*Metal oxides as photocatalysts*", 2015.
- [42] DropBox link "*History of Tin Whisker Theory: 1946 to 2004*", 2005.
- [43] DropBox link "*Magnetic field effects on electrochemical metal depositions*"; 2008
- [44] DropBox link "*Aromatherapy - What you need to know*"; 2020

Natural Method for Stopping and Preventing Wood Decay and Woodpeckers

- ^[45] DropBox link "*Lemongrass and Negative Ions*"; 2012
- ^[46] DropBox link "*Engr Conf Paper - Utility Animal Deterrence Research Results*"; 2006
- ^[47] DropBox link "*Method for Treating and Preserving Wood; US Patent #10,045,528*"; 2018
- ^[48] DropBox link "*PowerPoint: Science of Sniff'n'Stop*"; 2020
- ^[49] DropBox link "*Therapeutic uses for essential oils*"; 2020
- ^[50] DropBox link "*Essential Oils Supporting the Immune System*"; 2019
- ^[51] DropBox link "*Basic Info on Tin Whiskers, NASA*", 2019
- ^[52] DropBox link "*SDS - Sniff'n'Stop Sprays (Essential Oil Negative Ion Emulsion)*"; 2019
- ^[53] DropBox link "*SDS - Sniff'n'Stop Encapsulated Granules*"; 2019
- ^[54] DropBox link "*SDS - Sniff'n'Stop Essential Oil Negative Ion Emulsion Shampoo Additives*"; 2019
- ^[55] DropBox link "*SDS SnS Asphalt Enhanced Polymer Paint*"; 2019
- ^[56] DropBox link "*SDS - IFoam™ Structural Epoxy Foam*"; 2019
- ^[57] DropBox link "*Galvanic Cell*"; 2020
- ^[58] DropBox link "*Triboelectric effect*"; 2020
- ^[59] DropBox link "*Energy Harvesting from the Stray Electromagnetic Field*"; 2016
- ^[60] DropBox link "*The New Frontier in Low Temperature Plasma Applications*"; 2020

Natural Method for Stopping and Preventing Wood Decay and Woodpeckers

Supplemental List of ICORP and Sniff'n'Stop Products That Use E-SAP Technology

The following is a list of currently available products that use **E-SAP** to create **Energy Cells**:

Woodpecker Hole Repair and wood decay prevention. Used successfully for more than 30 years to structurally repair woodpecker damage. Creates a Cold Plasma Packed Bed Reactor inside IPOLE-repaired sections that stops decay and deters woodpeckers.

Wood Pole Paint stop and prevents wood decay and woodpeckers.

Granule Pouches and **Peel'n'Stick Pouches** keeps roaches and other disease carrying insects out of household cabinets and from areas underneath appliances like refrigerators, stoves, etc.. In Power and Telecom equipment, used to keep rodents out of cabinets, pedestals, and other sensitive areas.

Carpet Dust keeps fleas, and other insects out of carpets.

Chew Breaker Paint keeps pets, pests, and rodents from unwanted chewing.

Cold Fog used in misters, keeps mosquitoes and other insects from outside areas.

Flea & Tick Powder keeps fleas and ticks off of dogs. Also found effective against bedbugs.

Dusting Powder is a non-toxic powder that replaces pesticides in gardens and other agricultural applications. Can also be mixed with liquids for use in aerial spraying applications. Used in place of electrostatic sprayers.

Shampoo Additives are mixed with an equal amount of shampoo to deters flies, fleas, ticks, lice, and other insects from humans, horses, and other animals.

Coarse Granules, applied in yards, time-releases micro shocks that make yard bugs and other pests go away.

Multi-Purpose Spray is used on table tops to keep flies, roaches, and other insects away. Can also be applied in mop water for use on hard surface floors, and on baseboards to keep mice from using them as runways.

Personal (PPS) Protection Sprays and **Natural (NPS) Protection Sprays** generate micro sparks that electrically migrate across the skin and keep mosquitoes, ticks, chiggers, and other insects, from biting. A little goes a long way.

Treated Sponges are inductively charged by wrapping around Power and Telephone cables. Keeps rodents from chewing on cables in ducts, risers, and street lights.

Cable Lubricant Additive mixed as an additive with commercial cable lubricants, when it dries it keeps rodents from chewing on wires and cables.

Cable Paints keep rodents from chewing on aerial wires.

WASP AND BEE SPRAY immediately forces wasps and bees to leave.

Natural Method for Stopping and Preventing Wood Decay and Woodpeckers

THE ENERGIZER DIFFUSER OIL cleans the air of airborne viruses.

BED SPRAY keeps mites and Bedbugs away.

TOPICAL CREAMS keep ticks, chiggers, and other insects away.