

Technology Transfer

Experience:

US Patent and Trademark Office
University of IL Office of Research
Old Dominion Univ Office of Research
US EPA Natl Vehicle Fuel Emission Lab

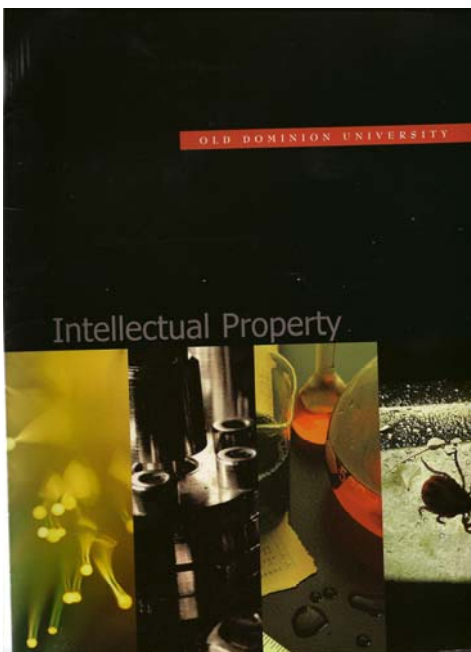
Highlights:

Patents
Trademarks
Copyrights
Intellectual Property Marketing
Intellectual Property Licensing

Lemongrass Consulting has experienced professionals to assist organizations with their Technology Transfer activities and developing Intellectual Property Strategies. Clovia Hamilton leads the Lemongrass team. Clovia is a registered patent attorney and former USPTO patent examiner. Clovia served the University of Illinois at Urbana Champaign, Old Dominion University, and the USEPA as a technology transfer specialist.

PUBLICATIONS AND PRESENTATIONS

- *High -Tech Transportation Corridors are in Vogue: Proposed Federal Transportation Policy Amendments*, 14 Albany L. J. Sci. & Tech. 2, Spring 2004.
- *Adequacy of the 1995 Antitrust Guidelines for IP Licensing: Commentaries from the 2002 FTC and DOJ Hearings about the Competition and Intellectual Property Law and Policy in the Knowledge-Based Economy*, 7 J. Internet L. 7, January 2004.
- *University Technology Transfer and Economic Development: Proposed Cooperative Economic Development Agreements under the Bayh-Dole Act*, 36 J. Marshall L. Rev. 397, Winter 2003.
- *Adequacy of the 1995 Antitrust Guidelines for the Licensing of Intellectual Property in Complex High-Tech Markets*, 7 Comp. L. Rev. & Tech. J. 23, Fall 2002.
- Association of University Technology Managers (AUTM) International Annual Conference, Invited Moderator and Speaker, Spring 2004.
- How to Operate a Small Technology Transfer Office.
- Best Practices in Tech Based Economic Development; and Poster Presentation on Proposed Amendments to Bayh Dole, Cooperative Economic Development Agreements (CEDAs).
- East Carolina University Office of Technology Transfer, Invited Speaker, December 2003, Material Transfer Agreements and Confidential Disclosure Agreements.
- AUTM International Annual Conference, Invited Moderator and Speaker, Spring 2003, How to Operate a Small Technology Transfer Office.
- Old Dominion University, Intellectual Property Kit, 2001.



**TECHNOLOGY
TRANSFER KUDOS to
CLOVIA HAMILTON**

Intellectual Property Old Dominion University

Monochromatic Vacuum Ultraviolet Light Source for Photolithography

Karl Schoenbach

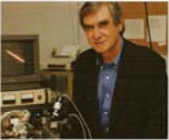
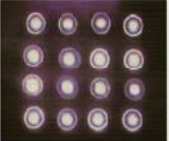
Professor Karl Schoenbach co-invented a novel hollow waveguide vacuum laser device to be used by the semiconductor industry for photolithography. Photolithography is an important part of integrated circuit (IC) fabrication. It is the process of printing circuits on microchips. Professor Schoenbach and his teammates at the Physics Institute have created a novel ultraviolet (UV) light source for photolithography.

Microchips are used in just about everything. They are in telephones, PCs, appliances, and so on. Microchips are made on thin slices of silicon which are used as the base material for building the millions of circuits that become the transistors of a microchip. The circuits are built by heating conductors and insulators onto a small wafer. The conductors are joined by thin layers of metal wire.

The first step in building circuits is to create or "grow" a silicon dioxide insulator to the surface of the silicon wafer. This insulator is covered with a photoresist layer. Photolithography is a process used to place a protective template over part of the photoresist. The template and photoresist are then exposed to UV light. The UV light causes photoresist to become soluble and is washed off, leaving a pattern of photoresist on top of the silicon dioxide insulator. The exposed silicon dioxide is then removed from the wafer along with the remaining photoresist, resulting in a series having a pattern of silicon dioxide. This is called etching.

This another layer of silicon dioxide is grown on the wafer. A conducting layer of photoresist is applied along with a new layer of photoresist. Photolithography and etching are used again. Doping is used to add ions to the exposed areas of silicon on the wafer. These ions alter the conductivity of the silicon, creating conducting paths within the wafer. These a layer of metal is added, followed by more photolithography and etching, forming a pattern of metal, creating contact points for circuits. Each microchip is half inch square, takes about 20 hours. Electrical connections follow and the chip is tested.

Co-owned with the Physics Institute of Technology, work supported by the National Science Foundation (NSF) and the Defense Advanced Research Projects Agency (DARPA).
Patent Pending.

"[T]hank you for the many positive things you have accomplished at Old Dominion University. The recognition ceremony and the patent brochure were certainly two highlights." -

**Dr. Roseanne Runte, President
Old Dominion University, '03**

"With you as Director of Intellectual Property and Research Compliance it was for the first time, that I had the feeling to get full support on securing our intellectual property and marketing it. It is (was) a pleasure working with you. You were always willing to listen, and to give advice. I hate to see you go to another University, but I wish you all the best for your new career." -

**Dr. Karl H. Schoenbach, Professor and Inventor
Physical Electronics Research Institute
Department of Electrical and Computer Engineering
Old Dominion University, '03**

"You certainly have raised our standards and our appreciation for what can be done with patenting, licensing, etc. Thanks for all your help." -

**Dr. Daniel Sonenshine, Professor and Inventor
Department of Biology and IACUC Chair
Old Dominion University, '03**

"I appreciate your taking time to share your expertise on IP matters this morning. You presented a tremendous amount of information in a very palatable format."

**Cynthia Easton, Grants and Contracts Administrator
Old Dominion University Research Foundation, '03**

"As always, you do a great job of quickly apprising us of the considerations required by relevant laws." -

**Dr. David P. Swain, Director
Wellness Institute and Research Center and IRB Chair
Old Dominion University, '02**

"We are impressed with your accomplishments in the ODU Program in such a short time on the job. You identified a significant number of important technologies and demonstrated an exceptional understanding of the science and commercial potential. We also compliment you on the excellent set of marketing materials you have developed for ODU." -

**Charles P. Blankenship
NASA Technology Commercialization Center, '02**

Intellectual Property Old Dominion University

Tick Control

Daniel Sonenshine



Protecting livestock from ticks is a major concern of the agriculture industry. Ticks cause infection and the spread of disease. They cause considerable dollar losses each year in the U.S. cattle industry.

In 1989, Dr. Dan Sonenshine and his co-inventors were granted US Pat. No. 4,884,361 (12/25/89) for a device containing a female tick, which can be incorporated with a sex attractant pheromone (i.e., 2,6-dichlorophenyl 2,6-DClP) emitted by nature females, a releasing pheromone and a particle. This device takes advantage of the feeding and mating characteristics of some ticks. The benefit that comes from using pheromone-assisted tick control technology is that the ticks are attracted to the lethal container, thereby greatly reducing the amount of pesticides chemicals required to kill them.

There are hard and soft ticks. Dr. Sonenshine co-invented US Pat. No. 5,149,520 (9/29/92), which describes a device, designed specifically to kill hard ticks containing the sex attractant pheromone 2,6-DClP and one or several (illustrated) odors containing the releasing sex pheromone. It was found that such ticks exhibit the probing and mounting mating behavior when exposed to female extracts of female tick (cattle) burrows (larvae). These compounds induce mating behavior to male ticks and disrupt their normal mating routine. This results in a subsequent reduction in the hard tick population.

There is also US Pat. No. 5,286,227 (12/29/94) that describes a device designed specifically for a type of hard tick known as "one ticked" or Lone ticks are commonly found in Africa and the Caribbean and are known to spread the fatal brain disease, BSE. This device can be used to attract longer lived ticks to a location where they can be destroyed. The device can be attached to an animal's tail, hair or fur.

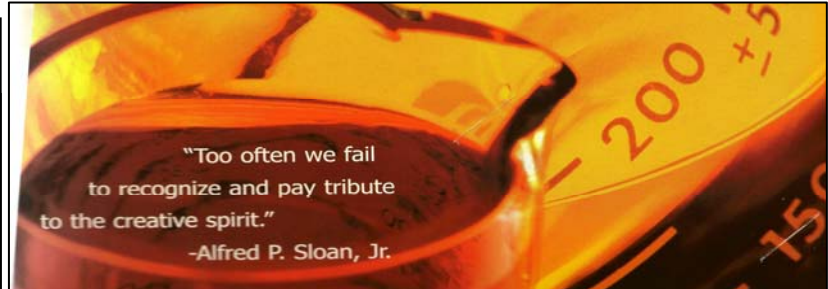
These devices have components incorporated in PVC plastic which slowly release the pheromone and a substance lethal to ticks (as available) over time. These devices are a great alternative to the use of environmentally hazardous pesticides.

Recently, the US Patent and Trademark Office allowed another patent application that describes an attractant device for another type of hard tick, the deer tick (see ticks spreadsheet). Ticks are vectors of Lyme disease. Again, the addition of the tick's natural pheromone boosts the efficacy of the tick-killing device tremendously. Moreover, these attractant devices can be used to kill ticks (a) before they bite animals or people.

Dr. Sonenshine is currently developing a means to prevent the spread of tick-borne disease such as Lyme disease and Rocky Mountain spotted fever by modifying the tick's biological lifespan. Since dog ticks do not co-feed because only Lyme disease the deer ticks, Dr. Sonenshine is developing a way to change the immune system response to deer ticks to assure that of dog ticks. Changing the immune system response to ticks is another alternative to the use of harmful pesticides.

Co-owned with the University of Florida.
US Patent 4,884,361
US Patent 5,149,520
US Patent 5,286,227

TECHNOLOGY TRANSFER KUDOS to CLOVIA HAMILTON (CONT'D)



"Thanks very much for presenting to the Intellectual Property & Entrepreneurial Development Advisory Committee yesterday. You made yesterday's meeting very successful. I know Delegates Purkey and Christina, Senator Howell and the rest of the Committee members greatly appreciated the information and views you shared." –

Eric Link, Staff Attorney
Joint Commission on Technology & Science
Virginia General Assembly, '02

"Wow! you have been busy and I love your plans! ... I appreciate your good work." –

Dr. Roseanne Runter, President
Old Dominion University, '02

"Thanks for all the good stuff you are doing!" –

Dr. William Swart, Dean
College of Engineering and Technology
Old Dominion University, '02

"Thank you so much for coming to my organization and administration class last week. You were wonderful, the presentation was excellent, the students loved you, your response to their questions was reasoned and thoughtful and they learned a lot." –

Dr. Michael Dingerson, Professor
Department of Educational Leadership and Counseling
Old Dominion University, '02

"Thank you! You made more progress in a very brief period than had been made in years...you've been a godsend to us." –

Jerry Robertson, PE, CmfGE
Director of Technology Applications
Old Dominion University, '01

"Let me say that it has been very refreshing working with you and seeing you react and resolve issues with snap-speed...Thank you for being so prompt, professional, and goal-oriented in working licensing issues with me." –

Dr. Constantine Polychronopoulos, Professor
**Department of Electrical and Computer Engineering University of Illinois-
Champaign, '01**



We can help you!

- Set policy and procedures for your IP Mission
- Execute programs to secure your IP rights in technology to defend you against allegations of infringement of the IP rights of others
- Conduct IP rights investigations during the formation and execution of contracts, as well as during contested matters
- Acquire licenses in IP rights
- Perform IP investigations and analyses in solicitations, contracts and grants on both a pre-award and post-award basis
- Research and Analyze solicitations, grants, and contracts related to research for issues involving IP rights, including reviewing documents for IP assertions by contractors
- Establish and maintain an invention surveillance monitoring program to assist in ensuring that you receive proper invention notification
- Establish and maintain records and files including electronic files of contracts and agreements being monitored
- Establish and maintain relationships with appropriate Scientific Officers, Contracting Officers, and Research Contract points of contact
- Investigate research including conducting interviews and reviewing technical reports and other relevant information in order to monitor the progress of each contract and agreement under surveillance
- Prepare royalty distribution memorandums, and enter royalty review information into financial systems
- Receive, enter, and track data related to license processing and royalty revenue, and produce reports
- Conduct basic legal research related to licensing regulations
- Prepare and provide training presentations on an as needed basis covering standard IP clauses in contracts and agreements, relevant research performer obligations, and other IP related issues
- Produce research and analyses of publicly available documents on file with the US Patent and Trademark Office and international patent offices related to patents and patent applications
- Conduct IP rights analyses as a pre-emptive defensive action to prevent or minimize allegations of infringement to avoid costly litigation