07.05.15

הזמנה ליום עיון ה-29

יום העיון יערך ביום ה', 28.05.2015, בין השעות 10:00-16:00, בבית הירוק שליד אוניברסיטת ת"א, רח' ג'ורג' וייז 24, רמת אביב.

על הפרק:

10:00 - 10:30 התכנסות וכיבוד.

10:30 - 11:15 הרצאה מס' 1: ד"ר אודין אלדר – "הצעה לשינוי ההנחיות בקביעת ההספק הקולי של שנאים לפי תקן IEC 60076-10

11:15 - 11:30 דיון בנושא ההרצאה

11:30 - 12:15 הרצאה מס' 2: Mr. Elias Wexler - "How door gasketing affects the sound performance of a sound rated door"

12:15 - 12:30 דיון בנושא ההרצאה

12:30 - 13:00 נושאים ארגוניים של האגודה

13:00 - 14:00 הפסקת צהריים.

14:00 - 14:45 הרצאה מס' 3: Mr. Barukh Rhode – "Fighting Bug Infestation with Sound"

14:45 – 15:00 דיון בנושא ההרצאה

15:00 -15:45 הרצאה מס' 4: מר גדעון שמיר – עלי הגיון בעוגב – עוגבים ואקוסטיקה

15:45 -16:00 דיון בנושא ההרצאה

בברכה,
אנה סגל
הוועדה הטכנית

הצעה לשינוי ההנחיות בקביעת ההספק הקולי של שנאים לפי תקן IEC 60076-10

ד"ר אודין אלדר
מעבדת חשמל למחקר ופתוח
חברת החשמל לישראל

In recent years, more and more transformers are designed with low induction levels and improved core designs. That leads to a change in the contribution hierarchy of the sound sources in transformers. According to the IEC Power transformer standard, the decision as to whether it is significant to perform load current sound measurements is made on a single equation which depends only on the rated power. In this lecture we shall suggest, through test examples, that this equation can be misleading and a modified methodology which is based on measurements of noise at both “no-load” and “load” states, is necessary.

מבוסס על המאמר:

The necessary state of performance that should be compulsory in the international regulations for testing noise of power transformers, O. Findling Eldar, Y. Kaplun, E. Shvartzblat, A. Gutman and U. Arbel, Noise Control Eng. J. 59 (4), July-Aug 2011.

Summary for the Israeli Acoustical Society:

How door gasketing affect the sound performance of a sound rated door.

1. The noise problem: In environmental
   In business
   In homes
2. Defining the noise problem
3. Comparison of sound pressure levels & loudness sensations
4. OSHA (federal code)
5. The mechanics of sound transmission through doors/partitions
   TL
   STC
   Representative STC values
6. The vital role of acoustical gasketing
7. Practical applications
8. Using gasketing to upgrade
9. Specification for sound retardant steel door and frames
10. Certifications
11. Q&A

Elias Wexler
President
Zero International, Inc.

Elias Wexler is a prominent and innovative entrepreneur and engineer. For the last 35 years, he has served as the President and CEO of Zero International, Inc., a leader in EMI/RF, Acoustical, Smoke, Fire and Air Infiltration gasketing for doors.
Zero's products are found in over 43 countries around the world, and are used in many high-profile building projects.
Elias is one of the founders and on the board of the NY Critical Manufacturing, the Office of Infrastructure Protection, U.S. Department of Homeland Security.

Elias has won many awards and acknowledgments and is the owner of numerous patents in the USA, Japan and China. He has been actively involved in cooperation with the navy in the design of advance fire protection systems for the new Nimitz class aircraft carrier. He has work in the design and development of special products for the Pyramid in Paris, The White House, The Staples Center in LA, and most recently for the Freedom Tower and the UN in NYC.

He has served as the president of the New York Society of Manufacture Engineers from 1986 to 1988. He is a member of the Builders Hardware Manufacturers Association, which advises and writes American National Standard Institute standards for manufacturers in the field. He also represented the United States Door and Hardware Industry in negotiations with the European Committee (ARGE) in Budapest in 2002. He has been a guest speaker at CSI and DHI trade conventions, and has been published in many trade magazines. He served as a visiting lecturer at the Pratt Institute of Design from 2007-2009, teaching modular design to future architects.

Elias was born in Romania and moved to Israel, where he served in the Israeli Defense forces. He earned his Bachelor's degree in Mechanical Engineering from the City College of New York in 1978, and worked towards earning his MBA at Iona College.

Elias Wexler
CEO and President

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IAC Meeting Abstract

Fighting Bug Infestation with Sound

Barukh Rohde, NSF Graduate Research Fellow, University of Florida

The Asian citrus psyllid *Diaphorina citri* (ACP) spread citrus greening disease, which has caused billions of dollars worth of damage to the citrus industry around the world. One reason for continued spread of the disease is that psyllids are less attracted to pheromone traps than are most insects. Instead, psyllid pre-mating communication is done through vibration. Male psyllids emit vibrational mating calls. Females sense them and emit reply calls. Male psyllids sense the reply calls and crawl toward the females. We have developed mimic psyllid calls that have been attractive to male psyllids. If we can automatically detect psyllid mating calls, and reply with mimic conspecific calls, we can disrupt psyllid mating and help to eradicate the scourge of citrus greening disease. But this requires careful application of acoustical detection technology.

Larger insects, such as the red palm weevil *Rhynchophorus ferrugineus* (RPW), kill trees primarily by burrowing and eating. Red palm weevil mating pairs lay eggs at the damaged base of a frond. Larvae develop inside trees, eating them from within. RPW infests 50% of all date palm-growing countries, including Israel, where it reduces productivity and collapses trees. Accurate detection methods are useful for RPW because the weevils spend a great deal of time in infested trees as larvae before emerging as flying adults and spreading to other trees.

Asian longhorned beetles *Anoplophora glabripennis* (ALB) similarly develop within trees long before they spread to other trees. But they have devastated both old- and new-growth North American forest, resulting in a massive eradication effort, and some $3.5 billion in annual damage in the U.S. ALB tends to fly from tree to tree only over shorter distances, and only after its base tree has a high ALB population. As a result, early detection methods are particularly needed for ALB.

In these insect species as well as in many others, larvae and adults produce sound when they feed and move. Vibrations produced by RPW in palm trees in Saudi Arabia, Spain, and Aruba, and ALB in America, were recorded using the AED-2010 preamplifier and field recorder. The recordings were analyzed using a lab-developed program, DAVIS, to assess presence or absence of RPW in the trees from spectral and temporal patterns within the recordings. Trees and offshoots were inspected for presence/absence of insects and other visual signs of infestation. We found a strong correlation between visual inspection of tree infestation and acoustical results. Once detected, infested trees can be treated or removed to prevent the spread of these pests. We are currently developing fully-automated devices for the detection of these invasive insect species. We are optimizing and porting DAVIS to embedded system platforms for widespread use in detection of these insects.

Barukh Rohde

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Objective

Eventual objective: To be one of the world's best bioelectric scientist-engineers, leading teams to e.g. use modern VLSI technology to design a chip with small enough electrodes to communicate with individual neurons in the human eye, curing some types of blindness.
Current objective: To obtain an internship in either VLSI or analog design so as to develop the electrical engineering expertise necessary for my eventual career goals.

Education

- 2nd-semester PhD student in Electrical & Computer Engineering at University of Florida
- Born in 1994; youngest current PhD student in UF
- NSF Graduate Research Fellowship: Won prestigious first Federal grant at age 19
- B.A. from Hunter College of the City University of New York
- Graduated undergraduate triple-major of Biology-Bioinformatics, Chemistry, and Statistics with a double-minor of Economics and Psychology
- 3.73 undergrad GPA, college honors, Biology dept honors
- Else Seringhouse Award for Excellence in Biology
- Medical College Admissions Test scored 36 (median accepted score at Harvard med school)
- Graduate Record Exam: perfect score on both Quantitative and Verbal Reasoning
- Spent two years of high school in Israel at Yeshivat Bnei Chayil
- Self-motivated: graduated early (age 16) through University of Missouri online high school

Relevant Skills/Experience: Current Research Project

- Project manager for two and a half years on projects to design devices to automatically detect sounds of invasive agricultural insects
- Placed largely in charge of a research lab under the supervision of Dr. Richard Mankin at the USDA-ARS-CMAVE (reference available upon request)
- Responsibly allocated over $200,000 in research funds, and communicated research progress to funders for continuation of funding
- Recruited and trained four electrical, software, and mechanical engineers on this project and kept them on board at low cost
- Recruited, trained, and supervised the work of over 20 science-oriented volunteers. Former students have continued into promising roles in the science world
- Currently overseeing a transition of the project from the lab into a startup company
- Will have seen current project from start to successful finish

Relevant Skills

- Electrical Engineering: Quartus, ModelSim, LTSpice, Cadence
- Programming: MATLAB (advanced), Arduino (pretty advanced), R (advanced), LabView (CLAD), Perl/Bioperl (moderate), SPSS (moderate), C++ (novice relative to software engineers, advanced relative to scientists). Some familiarity with UNIX, Java, ActiveX.
- Biological/Chemical/Wet Lab: Western blotting, PCR, slide preparation, GC/MS, UV/Vis spectroscopy, fluorimetry, NMR, DNA gel electrophoresis, cell culture, some small animal surgical techniques (once removed a mouse kidney by myself). Familiar with the field of medicine and medical terms.
- Communication: seven publications, eighth paper accepted before 21st birthday. Presented numerous posters and oral presentations at conferences ranging from "Emerging Researchers" to "Entomological Society of America" to "Photonics West" to farmer conventions. Has won conference awards for best oral and poster presentations.
- Keynote address: at Emerging Researchers conference, February 2014, in front of 400 people on the subject of momentum in a student's movement through science. Link to video of all but the first minute of it: facebook.com/video.php?v=10152212577367866&l=82654223395726022

Internships/Research/Work

- 01/2013 to 02/2014. Optics in Dermatology, at Rockefeller University under Dr. Dan Gareau and Dr. James Krueger. Worked to develop a system and device for the automated detection of melanoma based on its light scattering properties.
- 05-08/2013. SURP in Molecular Pharmacology, bioengineering of renal vasculature under Dr. Jeffrey Isenberg at University of Pittsburgh School of Medicine Vascular Medical Institute. Investigated effect of the thrombospondin-1 and CD47 pathway on renal NADPH oxidase expression and resulting production of reactive oxygen species.
- 06-12/2012. Biological Science Aid at the USDA-ARS-CMAVE in Gainesville, FL. See above for more on that subject. Continued running the project from long-distance during the next year and a half until my return to Florida in summer 2014.
- 03/2003 to 05/2013. Food preparation person at Talia's Steakhouse & Bar (NYC) from age 9 to age 19. Cut vegetables, washed dishes, delivered food by bicycle. Once worked 83 hours in a single very busy week.
- Age 6-7: Helped to unload weekly truck deliveries at Krispy Kreme; was paid in donuts

Hobby: Bicycling

- Won two bike races, including New York Century 2011 for unofficially fastest deliveryman in New York City. Once biked 202 miles in a single day.
- After having biked+hitchhiked to Pittsburgh for internship in 2013, continued afterward to Los Angeles. My first time ever in the state of Florida was on bicycle across the border from Georgia in June 2012.

עלי היגיון בעוגב - עוגבים ואקוסטיקה

גדעון שמיר , מוסיקאי ובונה עוגבים

<u>ראשי פרקים:</u>

- פרמטרים והיבטים שונים בעיצוב והפקת צלילי העוגב. הפיסיקה ,המתמטיקה ,והאמפירי.
- משפחות הצליל השונות ותפקידן .
- חטיבות העוגב השונות ואופיים הייחודי ,
- תפקיד הריאה והסרעפת.,
- סוגי מנגנון ותמסורת.
- השפעות גומלין מכריעות בין העוגב והחלל לתוכו נועד. הערכות מוקדמת, תכנון נכון, תיקונים והשלמות , שילוב גורמים המשפיעים על עיצוב , גודל ואופי העוגב.
- העוגבים וכך גם המוסיקה שנכתבת להם שונים זה מזה גם בהתייחס למסורות ,תרבות וסביבה גאוגרפית ומזג בני האדם.
- העוגבים באולמות קונצרטים בניגוד לעוגבי כנסיות או בתי כנסת.
- עוגבים מוזרים שפג תוקפם) עוגבי הסרט האילם , עוגבי בידור בבתי עם ואולמות ריקודים(
- עוגבים מכאניים בראי ההיסטוריה.
- על אמנות המגע ואפשרויות ההבעה בנגינה בעוגב ובפסנתר. המשותף והמפריד.

גדעון שמיר - מוסיקאי ובונה עוגבים

יליד 1939 תל אביב

לימודי מוסיקה בקונסרבטוריון והאקדמיה הישראלית בתל אביב.

1956-1962 לימודי המשך בקולג' המלכותי בלונדון. לימודי פסנתר ועוגב, בהצטיינות)פרס מדליה מהמלכה האם(

התעניינות באמנות בניית עוגבים ולימודים מעשיים בגרמניה אצל חברת וולקר הידועה בלודוויגסבורג. התנסות במגוון רחב של מיומנויות טכניות.

מכהן כראש מחלקת הפסנתר בקונסרבטוריון "אקדמא " אשדוד 1965-1977.

מוזמן להקים ענף לבניית עוגבים זעירים ליצוא בקיבוץ בית העמק. 1977-1980.

1983 לימודי הסמכה כאומן –בונה –עוגבים בגרמניה.)מאסטר(.

פרויקטים שונים של בניית עוגבים חדשים בארץ) 12 עוגבים בסדרי גודל שונים (, תחזוקה, רסטורציה ושימור

1993- 2000 הפרויקט הגדול של בניית העוגב הקונצרטי עבור אוניברסיטת חיפה –תרומת ד"ר ראובן הכט המנוח וקרן הכט.

עיצוב תכנון וביצוע פרויקטים ייחודים של עוגבי רוח עבור דני קרוון) באר-שבע ותל אביב (.

בסדנה לבניית עוגבים ביובלים ניבנה עכשיו עוגב עבור האקדמיה למוסיקה בירושלים.

צמוד לסדנה קיים אולם תצוגה עם שני עוגבים להדגמה, לאירוח קבוצות מבקרים למפגש מוסיקלי והרצאה על אומנות בניית העוגבים. הסדנה ערוכה ללימודי הכשרת בונה עוגבים לעתיד.