POLISH-AMERICAN ENGINEERS ASSOCIATION

FOUNDED

IN 1934

P.O. Box 241, Northbrook, IL 60065-241, USA • www.polishengineers.org

All members and friends of Polish-American Engineers Association are cordially invited to attend our meeting.

DATE:	Friday, January 17 th , 2020
TIME:	Doors Open 7:30 p.m.; Business Meeting begins 8:00 p.m.
PLACE:	Our Lady Mother of the Church 8747 W Lawrence Ave. Chicago, IL 60656
SPEAKERS:	Mr. Luciano Elementi
TOPIC:	The Mu2e AC-Dipole Magnet and its Ni-Zn Ferrites



Mr. Luciano Elementi

Luciano Elementi was born in 1966 in Genova, Italy, where he received his undergraduate and graduate MS in Electrical Engineering. He also holds an MBA from the St. Ambrose University in Iowa.

He has been working as a control and system engineer at Fermilab for almost 20 years both in his work and life he is versatile in and enjoy solving problems. He leads a support group in the magnet department and has been recently involved with issues concerning ferrite selection for the AC-Dipole.

ABSTRACT

Fermilab is in the process of building a charged-lepton flavor violation search experiment that will have a sensitivity 10,000 times higher than previous to approximant is designed to look for the direct conversion of muons to electrons

CLFV experiments. The Mu2e experiment is designed to look for the direct conversion of muons-to-electrons with a precise and complex apparatus that will be able to produce 200 million billion muons per year!

The Fermilab Magnet Systems Department is preparing to build three AC-Dipole magnets for the Mu2e Beam Extinction system. Magnets and consequently their ferrite bricks have demanding properties that must be measured and understood. We measured similar ferrite material, from different batches, and different vendors, focusing on their AC Losses and μ characteristics, uncovering interesting responses at two frequencies of interest: 300 kHz and 4.5 MHz.

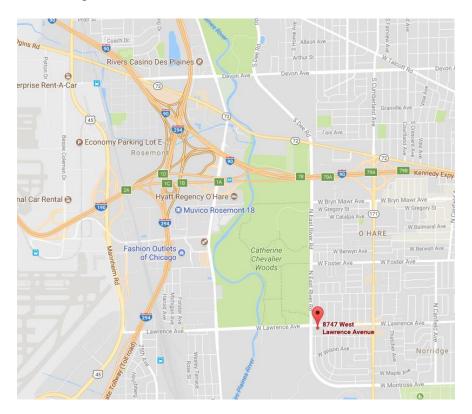
Although nothing unusual was observed at 4.5 MHz, the behavior of the same ferrite at 300 kHz is shown to be highly nonlinear with implications for both predicting the magnet power consumption and the effectiveness of the cooling.

We will briefly look at what the Mu2e Project is about, outlining the layout and some of its challenges. We look at the construction of the magnet, its prototypes, and then describe the ferrite characteristics challenges and present our analysis.

PAEA Announcements

MEETING LOCATION

Our Lady Mother of the Church 8747 W Lawrence Ave. Chicago, IL 60656



The entrance closest to our room is at the back of the church (Green arrow)- the best parking location is off of Oakview Ave, behind the church (Red box):



2020 Membership Dues

There is no change in dues for 2020: \$70 per year, senior citizens and students \$35 per year.

We ask that everyone pay their dues as soon as possible, as this is our source of operating funds. Thanks to those who have already paid! Membership Cards will be provided to all those who paid their dues. Questions? You may inquire at the meeting or send an email to: <u>administration@polishengineers.org</u> You may send your dues (checks payable to the Polish American Engineers Association) to:

> Mr. Andrew Pawlowski P.O. Box 241 Northbrook, IL 60065-241

You may also pay your dues at our meetings, and receive your Membership Card immediately.

Again, dues are critical in supporting the work of the PAEA- thank you for your support.

Mass in Memory of our Brother Jacek Szóstka

For the 2nd anniversary of our brother Jacek Szóstka's passing, there will be a mass Sunday, 19 January, 2020 at 12:30pm, at St. Zachary Church (567 W. Algonquin Rd., Des Plaines, IL 60016). Over the past 2 years Jacek has been greatly missed. All are welcome to come and share in this solemn moment of prayer and reflection. May his Soul rest in Peace...

PAEA Gwiazdka – 14 December, 2019

We would again like to thank all those who came to our Gwiazdka this year. It was great to share the holiday spirit in the warm atmosphere of friends at the Art Gallery Kafe.

We would also like to thank those who worked hard to organize the event, especially Aleksandra Jakubowski, Danuta Szymulanski, Rene' Pietrzyk, Marcin Chojecki, Bartlomiej Bobek. Finally, we would like to thank Rene' Pietrzyk and Adam Pelenski for leading us in singing kolendy.

Please share additional pictures from the event, either by sending via email (contact@polishengineers.org), or on our Facebook or LinkedIn pages.





Modjeski Illinois-Iowa Memorial Bridge in Danger!

At our Gwiazdka, Daniel Pogorzelski said a few words about the Iowa-Illinois Memorial Bridge, built under Chief Engineer Ralph Modjeski. The bridge, also known as the I-74 Bridge, is the oldest existing suspension bridge over the Mississippi River, as well as a memorial to Illinoisans and Iowans who served in the First World War. And it is scheduled to be demolished in early 2020!

Though there is little time, Mr. Pogorzelski is working to try to save the bridge. And as supporters and promoters of Poles in Engineering, we cannot simply sit by and let it be demolished, if there are viable alternatives.

Precedent solutions include the successful conversion of the Poughkeepsie Railroad Bridge (also designed by Modjeski) into a pedestrian bridge, now known as the Walkway Over The Hudson- the most visited State Park in all of New York State (according to a 2017 update of a 2011 study).

In an email we sent a short article Mr. Pogorzelski wrote on the subject, for more information, and for those who were not able to make it to our Gwiazdka this year. Unfortunately, we neglected to provide proper citation, as this was published in the Warsaw Institute Review- apologies for this oversight.

We will provide more information as it is available.

Member News/Update

We would like to remind everyone that we are looking for achievements of as well as other noteworthy news about our Members (that's you!). Please send us information about yourself or another Member (please ensure they agree to have this information publicized) to <u>contact@polishengineers.org</u>. We will publish in the next Bulletin available.

Job Postings – Please Send

As part of our mission of mutual support, we would like to offer job openings to our Members. Please send any openings you know about to <u>contact@polishengineers.org</u>. Please let us know where it is OK to post (our website in Members Only, our public page; Facebook, LinkedIn pages, etc.

We would also like to post on our website (in the Members Only section) links to job listings of companies in our network. So please send those as well. We would like to list your name next to the link, so those applying through those links can have a reference person to cite. Please let us know if you would rather not be listed.

Thank you in advance to taking time now to send us this information, which supports our common mission!

Reminder- Polish American Engineers Association on LinkedIn!

We would like to remind our Members & Supporters that the PAEA is on LinkedIn:

www.linkedin.com/groups/12032140

Check out our Group, become a member, and post interesting and relevant content. The more active we are, and the more interesting information we post, the more likely we are to attract others to our Group, in addition of course to the benefits of inter-Group communication.

Reminder- the Polish American Engineers Association on Facebook

We would also like to remind our Members & Supporters that the PAEA is on Facebook:

https://www.facebook.com/Polish-American-Engineers-Association-PAEA-1153830014674800/

Please check it out, and help us keep it active by 'like'-ing and posting interesting material.

Next Meeting Date

21 February, 2020

Corrections

None highlighted.

Special Interest

If anyone has an item of Special Interest to the PAEA Membership and sympathizers, please sent the details to <u>contact@polishengineers.org</u> for inclusion in the next (monthly except for June-August & December) published Bulletin.

Polish American Congress of Illinois Events Calendar

For a comprehensive and up-to-date listing of events in Polonia, please see the PAC-IL Polonia Calendar (many thanks to Mirek Niedzinski, Roman Korczak and the PAC-IL team for leading!):

https://www.pacillinois.org/calendar/

www.polishengineers.org