To: Neil Cotter <necotter@ece.utah.edu>
From: Fred Johnson <fred.johnson@utah.edu>
CC: Heather Stone <heather.stone@utah.edu>
Subject: ECE 3940 Proposal - Wireless Power

Dr. Cotter:

As requested in our first session of class, I am e-mailing you this proposal for my current ECE topic of study. Please read my proposal and determine if the subject is applicable for the assignment.

While looking for a topic, I searched several journals. Two of the journals I found were on the IEEE website. Those two journals are *IEEE Transactions on Industry Applications* and *IEEE Antennas and Wireless Propagation Letters.* The first journal had articles available as PDF files dating back to 1972. The second journal was a newer journal with articles dating back to 2002. I also used Scopus to research other journals and found several more. The two journals I looked at on Scopus were *AEU - International Journal of Electronics and Communications* and *Wireless Communications and Mobile Computing.* I found that searching for articles on Scopus was not as effective since most of the articles were not available online and need to be searched for elsewhere.

After searching through the many topics available in the numerous journals regarding electrical engineering, the topic that jumped out the most was wireless power. The attached article is one I found that meets the criteria set forth in class and is about sending power to a device without wires. This is a topic I find very interesting, and I believe this is how things will be done in the future. The article that I have chosen to write my paper on is "Development and Validation of Model for 95% Efficiency 220-W Wireless Power Transfer Over a 30-cm Air Gap." In addition to reading the article, I also looked at a couple of the references listed in the article. Below are the references for the primary article and the two references I examined:

1. Seung-Hwan Lee; Lorenz, R.D.; , "Development and Validation of Model for 95% Efficiency 220-W Wireless Power Transfer Over a 30-cm Air Gap," *Industry Applications, IEEE Transactions on*, vol.47, no.6, pp.2495-2504, Nov.-Dec. 2011 doi: 10.1109/TIA.2011.2168555
URL: http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=6022774&isnumber=6082064

2. H. C. Miller "Inductance formula for a single-layer coil", *Proc. IEEE*, vol. 75, no. 2, pp.256 -257 1987

3. D. Kurschner and C. Rathge "Contactless energy transmission systems with improved coil positioning flexibility for high power applications", *Proc. IEEE PESC*, pp.4326 -4332 2008

I am looking forward to researching this topic. Please let me know if this will work.

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