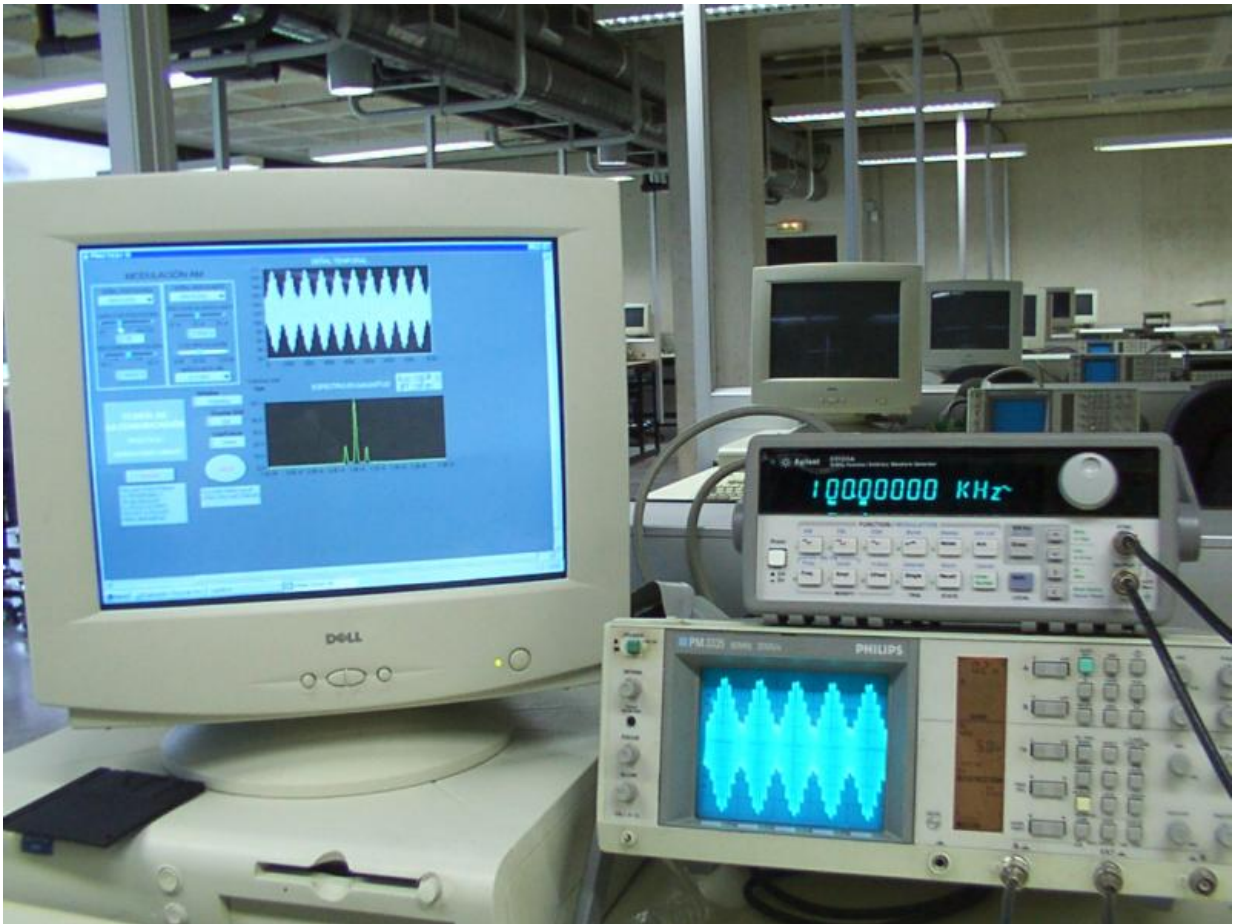


How to turn a basic electronics lab into a low-cost, advanced telecommunications one

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A low-cost, advanced telecommunications lab. Credit: (c) NUP/UPNA-Public University of Navarre

A piece of work by the NUP/UPNA-Public University of Navarre on how to turn a basic electronics lab into a low-cost, complete telecommunications lab has received the best paper award in the category of "Innovative Materials, Teaching and Learning Experiences in Engineering Education" at the 6th IEEE Global Education Conference (EDUCON). The conference, held recently in Tallinn (Estonia), is regarded as one of the main events worldwide in the field of engineering education.

The award-winning paper entitled "Turning a basic electronics lab into a low-cost communication systems lab" was presented by its author, Antonio López-Martín. This NUP/UPNA professor has connected the basic instrumentation of an [electronics lab](#) to a computer and has written some software which allows the measuring data to be acquired and complex, costly instrumentation equipment for communications to be emulated on the computer. That way it is possible to give experimental classes in telecommunications using economical equipment already existing at most universities without any additional expense or additional learning time having to be devoted to the instrumentation.

As Antonio López-Martín pointed out, "the invention is particularly attractive for universities in developing countries that cannot afford the expensive equipment needed for a degree in Telecommunications Engineering". The work has made a considerable impact in the international community and the software has already been transferred to universities in the United States and Mexico and to a research centre in Australia.

This author was previously the first European to receive the award for best paper in "IEEE Transactions on Education", the journal that is a reference worldwide in [engineering education](#).

More information: "Turning a Basic Electronics Lab into a Low-Cost

Communication Systems Lab", in Proc. *IEEE EDUCON*, Tallinn (Estonia), 2015. DOI: 10.1109/EDUCON.2015.7095953

Provided by Elhuyar Fundazioa

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