Testing Ourselves



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ive years! It's been five years since the "Testing Ourselves" column took off! We started with the first quiz back in February 2007. We have had variety of quizzes and, including this issue, 29 tutorials since then. We have discussed simple but fundamental issues, such as the meaning of the numbers we use [1], models and modeling [2], EMC [3], the antenna as a transducer [4], transverse waves [5], reciprocity [6], reliability [7], high-frequency asymptotics [8], the use of the discrete Fourier transform [9] and digital multi-meters [10], calibration in electromagnetics (EM) [11-13], statistics in EM [14], and bio-electromagnetics [15]. We have designed a rooftop antenna tracker [16] and a green energy supply system [17]. We have presented some interesting applications of, e.g., chaos [18] and FDTD [19]. We have also introduced MATLAB-based virtual tools (see, e.g., MWFilterDesigner in [20] and WedgeGUI in this issue).

I am happy to see that we have succeeded to present all the tutorials we promised for the last five years. I am also happy to see from David R. Jackson's report in the June issue that most of the AP-S members like having tutorials in the *Magazine*, and suggesting having more. We will continue to prepare some more interesting and useful tutorials for the year 2012. An interesting topic is academic publishing. Ross and I have agreed upon this and will try to make it ready for late 2012. We plan to discuss not only authors' challenges and responsibilities and related ethical issues, but also editorial and reviewer issues, problems, and challenges, starting from the definition and philosophy of the peer-review process. Please send us your thoughts and stories, so that we can use them as case studies. Other topics that may result in interesting tutorials are accreditation, timedomain and broadband measurements, and near-field probes. The one we promised back in 2008 was earthquake prediction. We have been working on that and will also try to make it ready in 2012. This has long been a hot topic, and will always be. A study in Nature [21] after Fukushima's disaster has triggered another discussion, which you'll find in our tutorial.

As always, this is an open call to all our expert members! We shouldn't forget that there are members and student members out there who do not have easy access to lecturers and trainers like you, so this is our social endeavor to assist those members. Please go ahead and e-mail us your thoughts and tutorial proposals. Note that the keyword for the tutorials is *simplicity*, so, try to keep it as simple as possible.

The Quiz for this Issue

The topic "Complex Variables and Applications" is usually discussed in graduate-level courses, and widely presented in Mathematics Departments, and partially in Electrical and Electronics Engineering Departments.

- How do you teach complex analysis? What are the challenges?
- We all visualize the function $u_0 = H_0^{(2)}(kr_0)$ right away, but can you picture $f = \sin z$ for z = x + iy?
- What is conformal mapping (CM)?
- Is it a physical or a mathematical concept?
- Where and why do we use it?
- Does it have anything to do with complex integrals in EM?
- Can you prepare a MATLAB-based tool for the useful illustration of conformal mapping?

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