



## Practical Papers, Articles and Application Notes

*Kye Yak See, Technical Editor*

Hello, I am Kye Yak, your new Technical Editor of the IEEE EMC Society Newsletter. It is both my honour and pleasure to have the opportunity to work with Janet O'Neil, the Editor-in-Chief, and the entire editorial team to serve the EMC community through this Newsletter. I would like to thank my predecessor, Professor Flavio Canavero, for his meticulous effort to solicit many wonderful articles during his term of running this column. He has made this column so successful that I can only hope to be able to match his results.

The key factor for the continuous success of this column requires your active participation and I encourage you to submit practical and interesting manuscripts to share with our EMC community. While all material will be reviewed prior to acceptance, it is not necessary that the paper be original or archival; it is only necessary that the paper be useful and of interest to readers of the Newsletter. I have a relatively smooth start for the current issue as the first two articles are the result of Professor Canavero's efforts; he invited the authors to contribute the articles and conducted the review process.

The first paper "Shielded Cable Transfer Impedance Measurements; Microwave Range 1 GHz–10 GHz" by B. Démoulin and L. Koné, is the conclusion of the three-part series on the measurement of the transfer impedance of shielded cables. The measurement of transfer impedance is not new, but to measure it correctly with repeatable results requires a proper test jig and experience. In the previous parts 1 and 2 of this series, the authors shared their many years of experience in the measurement of the transfer impedance of shielded coaxial cables up to 1 GHz. In this concluding part 3 of the series, they address the challenges faced in transfer impedance measurements up to 10 GHz. They propose a reverberation chamber measurement setup where the shielding attenuation of a shielded cable can be estimated with good confidence through the conversion from the measured transfer impedance results.

The second paper is contributed by Edmund K. Miller; it is entitled "Time-Domain Computation of Loop Inductance." For those of you (including myself) who were using Numerical Electromagnetics Code (NEC) for your wire antenna modeling many years ago, Dr. Miller is no stranger to us. He contributed significantly to the development of NEC, which led to him receiving a Certificate of Achievement Award from the IEEE EMC Society. Most of us are very familiar with the concept of partial inductance and how it can be used to obtain the loop inductance of arbitrary geometry. Dr. Miller proposes an alternative way to obtain the inductance of any arbitrary wire loop numerically using a time-domain computer model called the "Thin-Wire Time Domain" (TWTD) model. TWTD is usually employed for modeling wire antennas excited by impulsive voltage for their transient behavior and this paper extends TWTD to obtain the inductance of wire loops.

Professor Clayton R. Paul contributed the third paper, "The Remarkable Inverse Distance-Squared Law." You may wonder why many physical laws had their distance precisely squared. In this paper, Professor Paul shares his insights by examining the interesting relationship between the physical laws and their mathematical formulations. Some examples are shown to illustrate his observation on the famous inverse distance-squared law in both the law of gravity and Coulomb's law.

In conclusion, I hope you enjoy reading these papers and I welcome your suggestions and comments. With your active participation and with the help of independent reviewers, I really hope to be able to provide a great variety of enjoyable and informative papers. Feel free to communicate with me, preferably by email at [ekysee@ntu.edu.sg](mailto:ekysee@ntu.edu.sg).

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