

## Foreword about Professor Yuriy S. Shmaliy, IEEE Fellow, Head of Electronics Engineering Department, Universidad de Guanajuato, Mexico:

Yuriy S. Shmaliy has received his M.Sc. and Ph.D. degrees in 1976 and 1982, respectively, from the Kharkiv Aviation Institute, Ukraine, all in electrical engineering. In 1992, he received the D.Sc. degree from the USSR Government. He has served as a Full Professor since 1986. From 1985 to 1999, he had been with the Kharkiv Military University. In 1992, he founded the Scientific Center "Sichron", where he was a Director until 2002. Since 1999, he has been with the Universidad de Guanajuato of Mexico. He authored and co-authored more than 350 journal and conference papers and holds 81 patents. His books *Continuous-Time Signals* (2006) and *Continuous-Time Systems* (2007) were published by Springer. His book *GPS-Based Optimal FIR Filtering of Clock Models* was published by Nova Science Publishers in 2009. He also edited a book *Probability: Interpretation, Theory and Applications* published by Nova Science Publishers in 2012. He was awarded the title of Honorary Radio Engineer of the USSR in 1991 and listed in *Outstanding People of the 20th Century*, Cambridge, UK, in 1999. In 2015, He was awarded by Royal Academy of Engineering, UK, with a visiting professor one-year grant to continue research in City University London. He currently serves as an Associate Editor and Editorial Board Member for several journals. He has organized and chaired several international conferences on precision oscillation in electronics and optics and is a member of the organizing and program committees of many international symposia. During his scientific career, he managed a number of scientific projects. He has been invited to give many tutorial, seminar, keynote, and plenary lectures. His current interests include statistical signal processing, estimation theory, and stochastic systems.



Yuriy S. Shmaliy

Dear readers,

It is an honor for me to write several words to the auditory of the Journal of Advances in Electrical and Electronic Engineering which covers a broad area of electrical engineering problems. I serve as an Editorial Board member in this journal for several years and my observation indicates that the quality of papers becomes higher each year and the journals frontiers keep extending each year as well. Definitely, it is a reliable way to get to the Master Journal List of the Thomson Reuters International Scientific Indexing (ISI) which will result with time in the Journal world-wide recognition. I therefore wish you to reach a high-standing level of international journals in near future and be one of the leading European Journals in the field.

Let me now say several words about state-of-the-art in optimal estimation which is in frames of my present activities and which may generate some interest for readers. As it is well known, the Kalman filter is the best optimal estimator of linear models with white Gaussian noise. This is because the recursive Kalman algorithm is fast, accurate, and does not require large memory. But these properties fit ideal conditions and often do not survive in real-world when the noise statistics are not well known, as it usually is, and the process implies uncertainties. In such cases, a new unbiased finite impulse response (UFIR) filter demonstrates better robustness against uncertainties and higher immunity against errors in the noise statistics. The iterative UFIR algorithm also employs recursions, but does not require any knowledge about noise, thus has strong engineering features. Applications to filtering, smoothing and prediction of diverse state-space linear and nonlinear models have already shown that the UFIR estimator is a strong rival to the Kalman filter.

One of the most interesting applications for UFIR filtering is networking and localization. Here, the target (vehicle, robot, ship, aircraft, etc.) noise is often not precisely known and the surrounding implies uncertainties both in the behavior and in the measurement. Under such conditions, the Kalman filter often produces unacceptable errors. Thus, better robustness of the iterative UFIR estimator ignoring noise may be crucial to achieve highest accuracy and precision.

At last, it is great that the Journal team is looking forward to the prospect of developing more strong and popular Journal. I wish you a great success on this road and hope that the annual Conference organized by the Journal will also help elevating at a new level.