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Dr. Alexander Rukhlenko

Curriculum Vitae

Dr. Alexander Rukhlenko, SAW-BAW Consultant

Curriculum Vitae of Dr. Alexander Rukhlenko summarizes professional experience in SAW and BAW research and development, device design, modeling and simulation, CAD software development, MATLAB programming, and acoustic wave technologies.

Specialization and Interests

As a SAW/BAW expert, Dr. Alexander Rukhlenko has extensive experience in device modeling, simulation, and CAD tool development. His core areas of expertise include:

- Surface/Bulk Acoustic Wave (SAW/BAW) devices, Film Bulk Acoustic Resonators (FBAR), SAW/BAW filters, duplexers, etc.
- CAD/CAE design and simulation of SAW/BAW devices, including models, algorithms, and software development.
- Technical applications development using *MATLAB®* as a computational environment and high-level programming languages C/C++ and Fortran.
- Measurement automation, testing, and characterization of SAW/BAW devices.
- Acquisition, processing, and visualization of simulation and measurement data.

Profile of Dr. Alexander Rukhlenko

Dr. Alexander Rukhlenko presents a clear and pragmatic vision for advancing SAW/BAW computer-aided design by bridging the gap between sophisticated MATLAB-based physical models and practical electronic design and simulation

environments. A problem-solver and researcher by nature, he combines deep theoretical knowledge with extensive industrial experience in SAW/BAW device modeling, simulation, and software development.

Furthermore, his interdisciplinary background covers RF and microwave engineering, electrodynamics, physical acoustics, piezoelectricity, ultrasonics, and scientific computing. Dr. Alexander Rukhlenko has successfully applied this expertise to industrial research and development projects, software engineering, device design, and engineering education. As a result, he has developed a unique combination of theoretical insight, practical engineering skills, and strong technical communication abilities, including teaching, presentations, and technical writing.

In summary, his professional expertise includes:

- MATLAB-based engineering computing and development of advanced design and analysis tools used in industry and academia.
- C/C++ and Fortran programming for technical applications, including MATLAB MEX functions and *Keysight® PathWave Advanced Design System (ADS)* user-compiled models (UCMs).
  Development of proprietary software for SAW and BAW device analysis, modeling, and computer-aided design both for scientific research and industrial applications.
  Creation of a generic C/C++ interface integrating MATLAB models into ADS, improving simulation accuracy, flexibility, and computational efficiency. SAW/BAW micro-modeling (component-level) and macro-modeling (system-level) of complex acoustic-wave devices and systems.
  Design of state-of-the-art IF SAW filters for high-volume production.
  Measurement automation, data acquisition, signal processing, and device characterization.

Testimonials

The following testimonials reflect independent professional assessments of Dr. Alexander Rukhlenko's expertise, based on direct collaboration, technical discussions, conference presentations, and review of his publications and engineering activities.

“… Alexander is a high-caliber expert in the computer-aided design of SAW devices. He possesses a wide interdisciplinary background and works hard to advance his capabilities. …”

Dr. John Vig, IEEE Fellow, Past President of IEEE, USA

“…Dr. Rukhlenko has theoretical and experimental experience covering a wide variety of SAW devices and strong programming skills…”

Dr. David P. Morgan, Impulse Consulting, UK

“Dr. Rukhlenko worked as a consultant on SAW filter design. He developed useful filters meeting customer requirements using proprietary software.”

Dr. Donald R. Allen, Director of Engineering, CTS Wireless Components, USA

CAD/CAM/CAE, Programming

Dr. Alexander Rukhlenko applies the following CAD and programming skills in his projects and developments:

- PathWave Advanced Design System (ADS, Keysight)
- ADS Application Extension Language (AEL)
- MATLAB, Microsoft Visual Studio C/C++, Digital Visual Fortran
- MATLAB Toolboxes for RF circuit design, signal processing, filter design, linear and nonlinear programming, and optimization

Language Experience of Dr. Alexander Rukhlenko

International research collaborations, conference activities, and professional assignments in several countries have enabled Dr. Alexander Rukhlenko to develop practical proficiency in multiple languages. His language skills are summarized below:

- Russian – native language
- English – spoken and written, regular and long practice
- French – operational level ("niveau opérationnel de base")
- German – intermediate level (B2), good technical comprehension and reading

Current online version:
https://intrasaw.com/downloads/currriculum-vitae-alexander-rukhlenko