

RESUME

Personal Data

Name: Yosef Grach
Place of Birth: Russia
Date of Birth: 27 September 1941
Address: Froid A -16/3, Haifa - 34753, Israel
Tel: (972) – 4- 8110910
Email: YOSEF1941@013.NET
Languages: Russian (good)
Polish (good)
Hebrew (fluent)
English (good)
France (good)

Occupation

Professor of physics with specialization in electromagnetic fields.

Skills

Deep knowledge of electricity and mathematics.

- Development of the calculation methods for electromagnetic fields
- Synthesis of systems for magnetic fields generation with special properties
- Optimization and development of new nonlinear devices: permanent magnets, transformers and electrical machines, variconds, varicaps, superconductors, electronic lamps, varistors, grounding devices, communication cables and electric power lines
- Electromagnetic protection by UHF electromagnetic fields

Industrial Experience

Provisional Operation **2008 -** Israel Emphasis Measuring Company

Main Researcher **1995 – 2007** Israel Electrical Company, research laboratory.

- Measurement and calculations of electric and magnetic field of aerial and cable power transmission lines
- Design of programs for calculation of electric and magnetic power transmission fields

- Design of power transmission lines with maximally low values of magnetic induction in the environment and minimal losses

Main Researcher 1990 – 1995 Elscint, MRI Department, Israel

- Designed and developed a device for the magnetic field generation and measuring instruments for use in MRI medical imaging equipment
- Designed computer programs to generate high precision magnetic fields required for the MRI
- Investigated the eddy current effects of these fields on measuring coils for the MRI equipment
- Designed the mechanical layout of coils and interconnections to withstand 2000 kgf due to the interaction between pulsed currents of the MRI system.
- Developed a procedure for aerial parameters optimization for the reduction of losses for the MRI
- Performed a calculation for the optimization of shim coils for MRI
- Developed superconductant coils for MRI and constant magnetic fields
- Developed coils for MRI mammography

Teaching Experience

Professor, Head of faculty of Electrical Engineering and Technical Physics
1985 – 1990 Polytechnic Institute, Kyrgyzstan

Ph. D. Lector and Researcher of faculty of Electrical Engineering and Technical Physics
1969 – 1985 Polytechnic Institute, Kyrgyzstan

Education

M. Sc 1958 – 1964, with honor, Polytechnic Institute, Lviv, Ukraine

Ph. D. 1965 – 1968 Electrotechnical Institute, St Petersburg (Leningrad)
Thesis: Calculation of magnetic Fields and Distribution of Volume Currents.

D. Sc 1984, Research Institute of Electromachine Design, St Petersburg (Leningrad)
Thesis: Electromagnetic Fields, structural Analysis and Transformation Equations

Patents

Over 30 patents (Russia and Israel) available upon request

Awarded a title of the Recognized Inventor of USSR for the following patents:

- Digital Encoder for the Angle of Rotation
- Electrical Grounding Device
- Device for the Generation of Uniform Electric Fields
- Device for the Magnetic Processing of Crystalline slabs
- Method for the Refining and Recovery of Material from Sewage

Patent in common with Israel Electricity Company:

Electric cable with low external magnetic field and method for designing same

Publications

- 20 published methodical works available upon request
- Over 170 published scientific papers available upon request
- One monograph: **“Calculation of electromagnetic fields based on the analysis of their structure and transformation of equations in some special subspace”**
- Oral presentation on the 21 IEEE Convention of the Electrical and Electronic Engineers that took place in Israel.
Subject – “Evaluation of electric and magnetic fields in non-linear media on the grounds of the field geometry”

Others

Computer program implementation, by FORTRAN, of difficult mathematical and physics problems.