Application of advanced statistical and optimization methods for solving scientific, research and manufacturing problems in Pharmaceutical Industry, in developing medical devices and in other industries and areas (electronics, chemistry, semiconductors etc.)
PhD and D.Sc. in optimal design and analysis of experiments for discovering new drugs, formulations, materials, chemicals, rubbers, etc.
DOE and analysis for pre-clinical and clinical trials.
Continuous process quality improvement and optimization, V&V, R&R, FMEA, Lean, Six-Sigma. Statistical process control. Troubleshooting of complex manufacturing processes.
Reliability testing and quality assurance (QA) of industrial products and processes.
Additional background in Electrical Engineering and Automation (MS diploma).
Application of advanced statistical methods for developing quality robust products and for improving the quality of processes in chemical and pharmaceutical industry, biotechnology, oil industry, medical device manufacturing, semiconductors, business systems etc.
Developing models and algorithms for predicting market trends and subscribers behavior.
Teaching technical and non-technical staff on DOE, ANOVA, SPC, FMEA, Risk analysis, Six-Sigma, statistical and optimization methods, and on developing complex algorithms.
Experienced in Talent Development and Education Management.

EMPLOYMENT AND SOME MAJOR ACHIEVEMENTS:

Spansion Inc. Sunnyvale, CA 94088 01/2007 – 02/2009
MTS Statistician
Worked as a leading specialist in optimal design and analysis of complex experiments for: modeling and optimization of various semiconductor systems, screening and discovering critical factors, saving wafers and cycle time, identifying sources of variability in multi-stage processes and in reducing their effect on product quality.
Applied advanced statistical techniques to help engineers and scientists design new flash memory products and processes with robust quality. Used statistical analysis for solving manufacturing problems and for improving the quality of semiconductor devices saving time and resources.
Developed statistical models and conducted multi-objective optimization of complex technical and technological systems in semiconductor production leading to millions of $$ savings for the company. Prepared teaching materials on using SAS JMP for Design of Experiments (DOE), Optimization and Applied Statistical Methods. Organized the education in DOE and Statistical Modeling program at Spansion's internal "Kaizen University" and presented more than 23 classes at level 200, 300 and 400 during year 2008 to engineers, scientists and managers of Spansion Inc., Sunnyvale.

Aradigm Corp. Hayward, CA 94545 03/2003 – 05/2006
Staff Statistician
Design and analysis of experiments for modeling and optimization of complex technical systems and for medical device manufacturing and laboratory troubleshooting.
Discovering factor effects, screening multiple variables, modeling and optimization.
Capability analysis, SPC, R&R evaluation, Six Sigma, Robust product quality design.
Advanced statistical methods for developing new drugs, devices and processes.

Statistical analysis for solving product issues and improving quality of products and processes (new medical devices for inhaling and needle-free injecting)...
Multiobjective optimization of complex technical and technological systems.
Design and analysis of clinical trials for testing drugs and medical devices.
Design and analysis of experiments for developing and optimization of medical devices.
Conducting continuous education on "Practical Statistics" for engineers and scientists

LifeScan, Inc. J&J, Milpitas, CA 95035-6312, 09/2002 – 03/2003
Senior Statistical Consultant

Design of experiment for modeling and optimization of industrial production (producing medical devices and strips for measuring blood sugar etc.).
V&V of production process of strips for blood sugar measurements.
Design and analysis of complex experiments for strip production improvement.
Process capability analysis, R&R evaluation, introducing Six-Sigma methods.

Amphora Discovery Corporation, Mountain View, CA 94043 07/2002 – 11/002
Senior Statistical Consultant,
Statistical modeling of complex biopharmaceutical objects
Modeling and optimization of DNA and RNA measurement systems for research.
Design and analysis of experiments for DNA, RNA measurement instruments V&V.
Multi-objective optimization of measurement system parameters and reagent mixtures by optimal design of experiments and statistical modeling.

Caliper Technologies Corp, **Mountain View, CA 94043 05/2001 – 10/2002**
Statistical Consultant
Design and analysis of experiments for optimization of PCR reactions.
Designing experiment for DNA, RNA measurement systems and research.
Statistical process control of Biochip and Instrument production.
Multi-objective optimization of measuring process parameters and reagent mixtures by designed experiments and statistical models.
Solving SPC and reliability testing problems in the process of manufacturing of nano-technology chips and instruments.
Reducing the variability of products and instrument measurements using statistical methods and software. Process capability analysis and troubleshooting.

TELEPHIA Inc., San Francisco 02/2000 - 01/2001
Manager of Analysis
Led projects on "Predicting Wireless Market Events" and "Modeling Market Trends".
Supervised and participated in developing projects on predicting the market share of the wireless carriers SPRINT, VERIZON, GSM etc.
Conducted statistical analysis of accuracy of registering the number of active subscribers of wireless networks (standards AMPS, CDMA, TDMA, and GSM).
Developed methodology for calculating aggregate estimates for evaluating the number of active subscribers of wireless networks by using observational data.

Created methodology and developed the algorithms of software application of using Temporary Mobile Identifiers (TMSI) for estimating the number of active subscribers in GSM wireless networks, based on observational data.
Manipulated and processed data from observing the wireless carriers activities. Created marketing models, tables, graphs, trends, forecasts etc. using advanced statistical tools.

University of Chemical Technology and Metallurgy, **Sofia,**
Professor **1982 - 1999**
Teaching undergraduate and graduate students and engineers on: Applied Statistics, Design of Experiment, Statistical Process Control, Robust Quality Product Design, Optimization of Products and Processes, Industrial Controllers, Automation of production, Mathematics

National Institute of Quality, Sofia
PT Head of Department of Statistics
Supervised teams, working on developing statistical standards and on application of statistical methods for improving industrial products and processes

RESEARCH AND CONSULTING WORK FOR INDUSTRY
Developed new statistical methods and algorithms for creating software for designing optimal mixture experiments and for solving complex scientific and industrial problems.
Supervised and participated in many national and international projects on a consulting/part-time basis during academic career. Several examples follow:

Developing new high quality pharmaceutical products at SICPI-Sofia and Pharmachim Plants
Consulted on DOE and Optimization methods for more than 15 years on different projects, developed in the Scientific Institute for Chemical and Pharmaceutical Investigations (SICPI) in Sofia and adopted in pharmaceutical industry by “Pharmachim Plants”.
Designed statistical experiments and predicted the best formulation of a new drug Anapirin. Additional profit of more than $15,000,000 was obtained by the pharmaceutical plants PHARMACHIM, due to the production and export of this drug.
Optimized the formulations of Vitamin A tablets, dragees containing Silimarin, tablet compositions with Analgin, Diasepam suspension, Solid dosage forms containing Clenbuterol, Aminopyrine and Analgin tablets and reduced the cost of these products by more than 30% by using statistical methods and optimization techniques.

Supervised and consulted on using statistical and optimization methods in the following projects, developed at the University of Chemical Technology and Metallurgy – Sofia:

- Developing new advanced ceramic materials and high quality cements and glazes:
Optimal compositions of different kinds of ceramics, glazes and ceramic materials with optimal properties were developed in collaboration with engineers and researchers from industry and from the University of Chemical Technology and Metallurgy, using specially constructed experimental designs, statistical models and optimization techniques.

- New methods and algorithms for developing special software for modeling and optimization of quality of multi-component systems
Developed the algorithms of one of the first program systems for statistical modeling, multi-objective optimization and for constructing contour plots of mixture properties.
Developed the algorithms of one of the first and most efficient software systems for generating by computer D-optimal designs for experiments with mixture and process variables.
Created new efficient methods and algorithms for developing software for optimization of multi-component mixtures.

- Optimization of quality of tire production at "Vida" Plants,
Supervisor and participant in complex projects for developing special experimental designs, statistical models and optimization methods for solving industrial problems and for troubleshooting of products and processes.
"Vida" plants are among the biggest plants in Europe, producing all kinds of tires for trucks, cars, electric trucks, tractors etc. For more than 12 years the whole nomenclature of tires was under statistical investigation for developing new more effective formulations of tires parts and optimization of production processes. By applying specially developed experimental designs, statistical software and optimization procedures new optimal formulations and process parameters were invented and adopted in the mass production of tires.
Over $ 2,000,000 a year of additional profit was documented just for one project due to the reduction or replacement of expensive components with cheaper ones in the tires. The real profit was many times higher due to the improved quality of the tires and the production processes.
Supervised and participated in similar projects, leading to high profits in several other big plants, producing tires, transport belts and technical rubber.

Supervised European projects on "Education in Statistical Design of Experiments" with participants from universities of U.K, Italy, Greece and Bulgaria

SOME PROFESSIONAL AFFILIATIONS
American Society for Quality, Royal Statistical Society, London,
New York Academy of Sciences; American Association for the Advancement of Science.

PUBLICATIONS
Published 5 books and more than 130 articles and reports in the areas of: D- optimal designs for mixture experiments involving process variables, Methods and algorithms for generating D-optimal experimental designs, DOE for inventing and developing new drugs, materials and composites, new methods for simultaneous multi-response optimization in mixture and process variables (product and process parameters), optimization of processes in various industries etc.

EDUCATION
D.Sc. in **Applied statistical methods (DOE)**. Thesis: Methods of Constructing Optimal Composite Sequential Designs, University of Chemical Technology and Metallurgy-Sofia, 1992.
Ph.D. in Applied statistical methods (DOE). Thesis: Optimal Design of Mixture Experiments, Moscow Power Engineering Institute, Moscow.
M.S. Diploma of Electrical Engineer and Automation Engineer, Higher Institute of Mechanical and Electrical Engineering (Technical University), Sofia.

ADDITIONAL TRAINING AND VISITING FOR GIVING SEMINARS AS ACADEMIC VISITOR

Optimal Design of Complex Experiments, Moscow Power Institute, Moscow, Russia, 1 month.
Design of Experiment, Imperial College of Science and Technology, London, UK, 3 months.
Applied Statistical Methods and DOE, Glasgow University, Glasgow, UK, 6 months.
Optimal Design of Experiment, Technical University, Leipzig, Germany, 3 months.
Optimal Design of Complex Experiments, Free University of Berlin, Berlin, Germany, 3 months.
Design of Experiments for Biotechnology Research, Laboratory of Biometry, Paris, 4 months.

SOFTWARE USED: Design Expert, MINITAB, SAS, SAS JMP, SPSS, NCSS, PASS, EquivTest, S-Plus, Statgraphics, MS EXCEL, MS PowerPoint, MS WORD, FDOP, CDOP.

Fluent in English, Russian and Bulgarian