Borislav Simeonov

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**OBJECTIVE**

Senior Electrical R&D Engineer with over 23 years of accumulated and specialized experience in wide range of technologies for medical, industrial, and defense applications. Strengths in system design, development of electrosurgical/surgical medical products, component selection, and lab testing. Extensive experience and strong expertise in analyzing and resolving complex issues that require knowledge in hardware and software system.

**EXPERIENCE**

## 2015 – Present Electrical R&D Engineer at US Medical Innovations, Washington D.C., USA

* Responsible for circuit board development. Power electronics design (AC, DC, battery).
* Practical design of low power supplies for analog and digital circuits and modules.
* Prototype development and functional testing. Circuit design and simulation (PSPICE).
* Experience with analog regulators. Low voltage, low noise OP Amplifiers.
* Low power SMPS, PFC, Switching Regulators (Buck, Boost, Flyback).
* Familiar with “OrCAD Capture”, “PSpice “circuit simulation and “Altium Designer “.
* Responsible for initiation of Test protocols, product verification and validation.
* Creating and reviewing the hardware design documents, schematics, BOM documentation.
* Conducted electrical testing and troubleshoot electrical circuits that include motors, sensors, batteries, microcontrollers, RF, analog, & digital components, resulting in the identification and resolution of system defects by using oscilloscopes, power meters, logic analyzers.
* Regulatory compliance support. Familiar with ISO 13485 (QMS in the Medical device industry).
* Established appropriate test protocols supporting ISO 14971 (Risk Management for medical device).
* Contributed to technical analysis including Failure mode, Fault Tree Analysis, Design FMEA, Risk Hazard
* Analysis, for electronic components, assemblies and final product. Risk assessment.
* Integration and Test procedures supporting ANSI AAMI IEC 60601-1, 60601-2-2, Safety Standards.
* EMI/EMC/ESD operational engineering test protocols supporting IEC 61000-3-2, IEC 61000-3-3, IEC 61000-4-11, (Electromagnetic Compatibility Standards).
* Conduct failure analysis and root cause investigation.

## 2001 – 2015 Senior Electrical R&D Engineer, Bovie Medical Corporation, Saint Petersburg, FL, USA

* Research and development in the field of Electrosurgery. Designing innovative electronics products.

# Responsible for the development of electrical architecture with general devices like SMPS, Filters.

* Implementation of EMC (Electromagnetic Compatibility)-Requirements and test, for Medical Electrical Equipment (ANSI AAMI IEC 60601-1, 60601-2-2); Standard IEC 61000-3-2, IEC 61000-3-3, IEC 61000- 4-11, ANSI AAMI HE75, ANSI HF-18, IPC J-STD-001 Join Standard.
* Established appropriate test protocols for product verifications and validations following GMP, FDA, ISO operational procedures, ISO 9001, ISO 13485, and ISO 14971.
* Contributed to technical support and the creation of quality protocols, Engineer Change Orders (ECO), Design History Record (DHR), technical files and safety.
* Experience with digital and analog design of Electronic Medical Devices. Implementation of hardware and software. Power electronics design, including Voltage and Current sensors.
* Designed and developed RF generators and Amplifiers for General Electrosurgery.
* Initiated and consulted the preparation of prototypes for RF Leakage measurements.

# Manage BOM components and work with a procurement team.

* Actively supported FPGA, CPLD software implementation, Quartus 2 Programmer, including RS 232, SPI, UART bus communication Standards.
* Developing Special projects, including Argon plasma coagulators with **New Plasma Technology**.
* Implementation of **J-Plasma** in the field of medicine, laparoscopes, Handheld surgical equipment.
* I interacted directly with management, customers, suppliers and subcontractors to submit an updated project schedule and included modifications according to customer requirements to improve and ensure product quality.

## 2000 - 2001 Test Engineer L3 Detection And Security Systems, Saint Petersburg, FL

* Supervised and coordinated the research, design, development, testing, procurement, modification, and repair of electrical and electronics equipment. Analyzed and diagnosed PCB failures, testing process and configuration.
* Actively supported Dell, Avaya, and Lucent production lines. Developed teat plans, test defect logs and reports.

## 1991- 2000 Research Associate, Bulgarian Academy of Science, Sofia, Bulgaria.

* Design, installation and setup of Automatic control systems, power supplies, and op-amp circuits
* Implemented hardware modules for information acquisition and processing, test and support.
* Used neural networks in control systems and their application.

**EDUCATION**

* + **Bachelor and Master of Science, Electrical and Electronics Engineering,** Technical University of Sofia
  + **Specialization in Direct Current Drives**, Technical University of Sofia
  + **Specialization in Mathematics and Computer Sciences.** Technical University of Sofia

## Post Graduate course on Electric Drives Automation, Certificate of required for PhD Degree minim,

Technical University of Sofia

**Skills**

* Electrosurgical Devices.
* Risk Hazard Analysis.
* Failure Mode Analysis.
* Circuit board development.
* Power management (AC, DC).
* Analog Circuit Design.
* Verification and validation (V&V) test plans.
* EMI/EMC compliance and testing.
* Magnetic component design.
* Development of test plans, protocols, and reports.
* Prototype development and functional testing.
* Failure analysis investigations.
* Product design and manufacturing.
* Engineering analysis and qualification testing.
* Technical documentation (drawings, specifications, reports, manuals, procedure).
* Circuit simulations (PSpice).
* Circuit board design and layout (Altium Designer, PCB design).
* Experience with test equipment (oscilloscopes, spectrum analyzers, logic analyzers).
* Working knowledge of IEC 60601 testing and medical electrical safety standards.
* Working knowledge of ISO 14971 (Risk Management for medical device).
* Working knowledge of IEC 61000-3-2, (Electromagnetic Compatibility Standards).
* Familiarity with FDA Design Controls.
* Adherence to quality management systems (ISO 13485).
* MS Project, Excel, Word, PowerPoint.
* Familiar with Xilinx FPGA development tool.
* Component selection and BOM management.
* Risk Hazard Analysis.
* Microsoft Office Package: MS Word, MS Excel, Power Point, MS Access, MS Project
* OrCAD
* Math Lab

**AFFILIATES**

**Founding Member of the International Society of Plasma Medicine (ISPM). Member of “Academic” Sport Club Bulgarian Federation of Yachting HONORS & ACTIVITIES**

* Awarded the prize **GOLD MEDAL** –INTERNATIONAL FAIR – Plovdiv “INNOVATIVE PRODUCT DEVELOPMENT”
* Awarded the rank **of Master of Sport in Yachting**,
* **REPUBLICAN CHAMPION IN YACHTING** CLASS “QUARTER TON K25, **1986**, Awarded the Prize

**GOLD MEDAL.**

**SOCIAL SKILLS AND COMPETENCES**

Aptitude for teamwork, transparency in working and a team-oriented work ethic. Capacity to establish and maintain excellent working relations in a multicultural context. Good communication skills and strong inter- personal qualities including discretion, diplomacy and tolerance. Positive and constructive attitude, Initiative, flexibility, perseverance and empathetic approach.