Catalin STOICHITA

9, avenue Odette, 94500 Champigny sur Marne, France
06 34 98 81 72 stoichitac@gmail.com
French nationality

Technical Manager
Electronics Design Office Manager
Electronics engineer
PhD in Electronics Engineering (Since 2015)

CAREER PATH

Jan 2021 to present — **R&D Microscopy Consultant**
Signet SAS, France
- Low-signal electronics,
- Optical design
- Mechanical design
- Ti:Sapphire lasers.

jan. 2016 to October 2019 — ***Electronic Design Office Manager - AERECO,*** *Collégien*
Ventilation systems manufacturer
- BEE management (Agile, SVN, JIRA ...)
- Technical advisor
- Technology watch
- Connected ventilation system architecture
- Supervision and control of energy recovery ventilation projects
- IoT - CO2 sensors, Presence sensors, etc.
- Digital and analog HW development
- EMC compatibility
- Embedded SW development
- Test bench architecture and development supervision

Sept. 2014 to May 2015 — **Consultant for Multimodal-Microscope SNOM+AFM+CONFOCAL+CLASSIC**
Center for Microscopy - Microanalysis and Information Processing, **LANIR project, Politehnica** University, Bucharest**.**
- Low-signal electronics,
- Optical design
- Mechanical design
- Start-up of the multimodal platform.

nov. 2010 to Apr 2014 — ***Technical Director and*** **Electronics Office Manager** **- *Neelogy S.A.*** *Cachan*
Manufacturer of Neel-effect current transducers.
- Member of the Executive Committee,
- Technical referent,
- Technology watch,
- R&D supervision and management,
- Qualification tests,
- FPGA firmware,
- Low-noise analog hardware for Neel effect transducers,
- Switching power supplies,
- EMC testing and countermeasures,
- Automatic measurement software,

- Creation of individual, integration and validation tests,
- Aeronautical and rail constraints,
- Manufacturing technologies for current transducers,

March 2010 to August 2010 **Project Manager - *Trophy-Kodak Systems - Carestream Health***. *Croissy Beaubourg Market leader in digital dental radiology.*

- Real-time embedded software (C166, KEIL platform) for the new K9300 3D dental panoramic,
- New version of the Ralco R11 collimator.

2009 to February 2010 **Consultant for SNOM Microscope - *Center for Microscopy - Microanalysis and Information Processing,* LANIR project**
Politehnica University, Bucharest**.**

- Creation of an Apertureless Scanning Near-Field Optical Microscope - an ingenious blend of micro-mechanics, optics, lasers, electronics and software.

1992 to 2008. **Founder / Chairman / R&D Director - *SIGNET S.A.S***. *- Paris*.
Design and manufacture of digital imaging systems for dental panoramas. More than 300 dental practices and hospitals in the United States.

- Creation of a company entirely dedicated to medical X-ray imaging. Management of multicultural teams of 2 to 10 people (France, Canada, Algeria, Romania),
- Creation and launch of the world's first dental panoramic, sold since 1995 under the name DXIS (Direct X-ray Imaging System). Technical specifications main :
  - CCD-based image sensor,
  - Precise, real-time radiography,
  - X-ray dose halved.
- Identification and development of different DXIS versions for 13 digital panoramas,
- Creation of a subsidiary in Canada and recruitment of a 4-person team to launch DXIS on the North American market,
- International sales: Germany and Austria in particular from 1995, followed by the United States, South Korea and Japan,
- Signet S.A.S. is recognized as the world leader in digital dental panoramic technology.

1990 à 1992 **Project Manager - *TROPHY RADIOLOGIE SA*** *- Vincennes . Medical Radiology*

- Proposal force for RVG architecture,
- Successful design and production of the world's first digital thermal printer for PCs, developed for Sony (still sold in 2008),
- Project manager for the new version of RVG (Radio Visio Graphie), generating 75% of the company's sales,
- Analysis of electroshock risks with the RVG in close collaboration with the Laboratoire National de Métrologie et d'Essais.

Previous experience

1987 à 1990 **IT Manager - *IAMSAT*** *- Bucharest, Romania. Industrial automation*

- BIOS & Implementation of CPM & ISIS-II operating systems on Intel and Zilog architectures.

1981 à 1987 **Commissioning Engineer - *IAMSAT*** *- Bucharest, Romania. Industrial automation.*

- Automation in the steel, petrochemical, nuclear, rubber, sugar, edible oil, cement and paper industries. Management of teams of 2 to 10 people,
- Start-up and adjustment of automated systems on numerous industrial sites.

TECHNICAL SKILLS

Modeling :

Comsol, Matlab, Simulink, Labview, Spice.

Languages and applications :

Development in various assembly and C languages on microcontrollers, C/C++, C#,
Low-level software, embedded real-time environments, various applications on Windows platform,
Drivers for Parallel bus, RSXXX, I²C, ISA, PCI, USB, X-ray image processing,
Medical imaging.

Communication bus :

CAN, Modbus , Parallel, RS232, I²C, ISA, PCI, USB.

Internet & Telecom :

Web design, HTML, JavaScript, PHP, VOIP, TCP, UDP.

Electronics :

Digital development (Xilinx FPGAs & Altera EPLDs), VHDL,Verilog,
Low-noise, high-speed signal processing, CCD-based image sensors, design of radio and TV traffic receivers and various test tools up to 1Ghz, design, development, routing, testing and integration of electronic boards,
PCB layout and routing (Cadence-Orcad, Altium), EMC, manufacturing, final assembly, testing, reliability, troubleshooting.

Microcontrollers :

Infineon, Intel, Zilog, Freescale, National, Microchip, Amtel, Espressif

Mechanical :

Various mechanisms, development on Autocad, Inventor, Catia, Solidworks.

Physics / Optics :

Gas laser construction, laser scanning microscopy, Near Field Microscopy, other laser applications.

Others :

Stepper, DC and AC motor controllers, PID control loops, electric and pneumatic actuators, various translators,
Resin prototyping, machining on lathe and milling machine,
FDA and CE markings.

FORMATION & LANGUAGES

2015 **PhD in Electronics and Telecommunications** - Polytechnic University of Bucharest (Romania)

- Contribution to near-field microcopy

1981 **Master's degree in Electronics** (Bac+5) - Bucharest Polytechnic (Romania)
Researcher at the Physics Laboratory

- Major contribution to the development of the first laser scanning microscope,
- Participation in semiconductor research,
- International publications (Revue Physique Appliquée (Paris) 15, 55-59 in 1980).

Languages **English** - Bilingual
French - Bilingual

INVENTIONS

- Instalatie pentru studiul materialelor si dispozitivelor semiconductoare (RO 95574-6-02/11/78),
- Method and apparatus for acquiring images by X-rays (US 5,398,275),
- Apparatus for making X-ray pictures in dentistry (EP0506559A1),
- Rotating Mechanism for Dental Panorex (EP0961576A1),
- X-ray image acquisition method and device for performing the process (EP0585172A1),
- Computerized radiography system (FR2679436B1),
- System and Sensor for scanning and Digitizing X-ray Images (WO/1995/012133),
- Non-contact current sensor (EP2761309A1),
- Current sensor measuring the magnetic field inside the conductor (FR1162100),
- Two-coil transducer and magnetometer incorporating such a transducer (FR1359991),
- Self-oscillating regulator on excitation harmonics (FR1455074),
- Quadrature excitation magnetic field transducer (FR1453276),
- A.C. regulator and measuring device (Neelogy registration pending),
- Magnetic field capture using the supply current of an H-bridge (currently being deposited by Neelogy),
- Leakage current sensor (FR1551631).
- Ventilation air distribution method (FR1762499)

Publications

- Tranca, Denis E., et al. "Applications of Phasor Data Analysis on Scattering Scanning Near-field Optical Microscopy Investigations." *2023 23rd International Conference on Transparent Optical Networks (ICTON)*. IEEE, 2023.

- Stanciu, G. A., Tranca, D., Stanciu, S. G., Hristu, R., & Stoichita, C. (2021). Scattering-type scanning near-field optical microscopy. In *Imaging Modalities for Biological and Preclinical Research: A Compendium, Volume 1: Part I: Ex vivo biological imaging* (pp. I-3). Bristol, UK: IOP Publishing.

- Stanciu, G. A., Tranca, D. E., Stanciu, S. G., Hristu, R., Stoichita, C., & Bueno, J. M. (2019, July). Correlative imaging using a multimodal microscopy system for investigations at micro and nano scales. In *2019 21st International Conference on Transparent Optical Networks (ICTON)* (pp. 1-4). IEEE.

- Stanciu, S. G., Tranca, D. E., Stoichita, C., Hristu, R., & Stanciu, G. A. (2018, July). Imaging Biological Specimens and Advanced Materials with Correlative Far-field Near-field Microscopy. In *Conference on Lasers and Electro-Optics/Pacific Rim* (pp. Th3K-4). Optica Publishing Group.

- Tranca, D. E., Stoichita, C., Hristu, R., Stanciu, S. G., Sammut, C. V., & Stanciu, G. A. (2018, July). Nanoscale Investigations of Optical Fiber by Using Scattering Scanning Near-Field Optical Microscopy. In *2018 20th International Conference on Transparent Optical Networks (ICTON)* (pp. 1-3). IEEE.

- Stanciu, G. A., Tranca, D. E., Stanciu, S. G., Stoichita, C., & Hristu, R. (2017, July). Nanoscale imaging by using label free microscopy techniques. In *2017 19th International Conference on Transparent Optical Networks (ICTON)* (pp. 1-4). IEEE.

- Tranca, D., Stanciu, S. G., Hristu, R., Stoichita, C., & Stanciu, G. A. (2016). Amplitude and phase reconstruction issues in scattering scanning near-field optical microscopy. *Sci. Bull. Politeh. Univ. Bucharest Ser. A*, *78*, 253-262.

- Stanciu, G. A., Tranca, D. E., Hristu, R., Stanciu, S. G., Stoichita, C., & Toma, A. (2016, July). Nonlinear optical effects used for investigations on biological samples at micro and nanoscale. In *2016 18th International Conference on Transparent Optical Networks (ICTON)* (pp. 1-3). IEEE.

- Tranca, D. E., Stanciu, S. G., Hristu, R., Stoichita, C., Tofail, S. A. M., & Stanciu, G. A. (2015). High-resolution quantitative determination of dielectric function by using scattering scanning near-field optical microscopy. *Scientific reports*, *5*(1), 11876.

- S.G. Stanciu, C. S., R. Hristu, D. E. Tranca, G.A Stanciu, Combined Multimodal Imaging at Micro-and Nanoscale Using Complementary Contrast Mechanisms, EURONANOFORUM Riga, Latvia, June 2015 (Presentation Award)

- Tranca, D. E., Stoichita, C., Hristu, R., Stanciu, S. G., & Stanciu, G. A. (2014). A study on the image contrast of pseudo-heterodyned scattering scanning near-field optical microscopy. *Optics Express*, *22*(2), 1687-1696.

- Stanciu, G. A., Tranca, D. E., Hristu, R., Stoichita, C., & Stanciu, S. G. (2013, June). Investigations at nanoscale by using fluorescence in apertureless scanning near field microscopy. In *2013 15th International Conference on Transparent Optical Networks (ICTON)* (pp. 1-3). IEEE.

- Stanciu, G. A., Stoichita, C., Hristu, R., Stanciu, S. G., & Tranca, D. E. (2012, July). Metallic samples investigated by using a scattering near field optical microscope. In *2012 14th International Conference on Transparent Optical Networks (ICTON)* (pp. 1-3). IEEE.

- Stoichita, C., Hristu, R., Stanciu, S. G., & Stanciu, G. (2009, December). Near field investigation based on a novel apertureless near field optical microscope. In *2009 3rd ICTON Mediterranean Winter Conference (ICTON-MW)* (pp. 1-3). IEEE.

- Stanciu, S. G., Coltuc, D., Hristu, R., Stoichita, C., & Stanciu, G. A. (2009, December). Image fusion for photonic quantum ring laser structures investigated by confocal scanning laser microscopy. In *2009 3rd ICTON Mediterranean Winter Conference (ICTON-MW)* (pp. 1-4). IEEE.

- Stanciu, G. A., Stoichita, C., & Stanciu, S. G. (2009, June). Scanning laser microscopy: From far field to near field. In *2009 11th International Conference on Transparent Optical Networks* (pp. 1-5). IEEE.

- Cone G. F., Popescu I. M., Stanciu G. A., Stoichita C. M. - Determinarea timpului de viată al nivelului 3s2 al neonului din rotatia Faraday la rezonanta, Buletinul IPB, Seria Electrotehnica, 45, 11 - 15, (1983)

- Cone G. F., Popescu I. M., Stanciu Gh. A., Stoichita C. M. - Determination of maximum population inversion with resonant Faraday effect, Rev. Roum. Phys. 27 (5), 515 517, (1982)

- Stanciu G. A., Popescu I. M., Stoichita C.M. - Evolution of the photocurrent in a region with inversion layer of the pnp transistor, Phys Status Solidi A 71 (1): K17-& (1982)

- Cone G. F., Popescu I. M., Stanciu G. A., Stoichita C. M. - Realizarea unei instalatii experimentale

pentru studiul efectului Faraday rezonant si nerezonanta la gaze, Buletinul IPB, Seria Electrotehnica, 44 (2), 9 - 13, (1982)

- Stanciu G. A., Popescu I. M., Stoichita C.M.- A digitally controlled system for the study of semiconductor devices by scanning a laser light beam - Rev. Phys. Appl. 15, 55-59, (1980)
- Popescu I. M., Stanciu G. A., Stoichita C. M. - Corectia in frecventa a unui deflector galvanometric utilizat intr-un sistem de baleiaj cu fascicul laser, Buletinul IPB, Seria Mecanica, 43 (4), 17 - 22, (1981)
- Stanciu G. A., Popescu I. M, Stoichita C. M., Budianu E. - Caracterizarea prin baleiaj cu fascicul laser a fotodiodelor p+n cu Si, Buletinul IPB, Seria Electrotehnica, 42 (2), 11-15 (1980)
- Stanciu G. A., Popescu I. M., Stoichita C. M., Localization of diffusion pipes using a laser scanning digital system, Rev Roum Phys 25 (10): 1119-1124 (1980)
- Stanciu G. A., Popescu I. M., Stoichita C. M. - Determinarea timpului de viată al purtătorilor minoritari utillizind baleiajului unui fascicul laser , Buletinul IPB, Seria Electrotehnica, 43 (1), 19, - 22, (1980)