ITEC – EMBEDDED GROUP

Contact details

Name	**Information Technology in Electronics Research and Development Center**
Acronym	**ITEC - Embedded**
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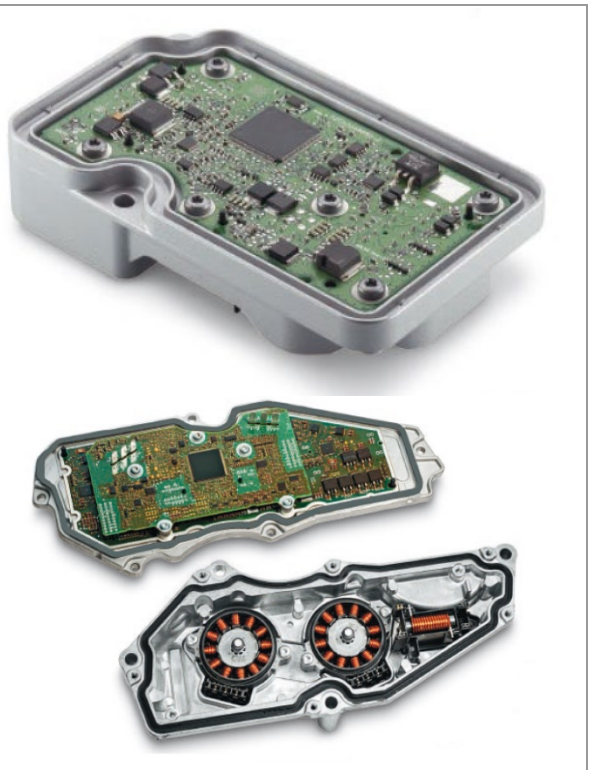

Areas of expertise

Embedded systems for Automotive
- Circuit design: modeling, simulation and cross-simulation of electronic circuits (analog, digital, power, RF/EMI) using: Multisim, Pspice, Matlab, Pcad;
- System design: modeling and simulation for electro-mechanical systems: power devices, actuators, mechatronics; using: Matlab, Simulink, LabVIEW;
- HW Application design: fast-prototype design, PCB design for mass production, BOM/AVL design, DfT and testability for embedded applications, power supplies, interface/signal conditioning boards;
- SW Application design: embedded control applications for OS and non-OS targets, broad range of targets (from small 8bit up to TriCore), V-modell development for SW, SW re-use;
- TW Application design: testing and design of testing systems: SW and HW testing process, HiL and SiL, design of test-cases for SW;
- Training services: LabVIEW trainings, Embedded Systems trainings, TW and HiL operation;
Power systems
- design, simulation and testing of power supplies with power factor correction
- PLC (Power Line Communication) for energy measurements equipment
- inductive heating technologies
SCADA systems
- control for automotive systems
- heating/oven control
- control systems for electrical motors
- data loggers for power industrial control, medical apps
Certifications
LabVIEW Certified Developer, FMEA Specialist, Zuken Sch & PCB, Mentor Graphics PI & SI

Team

Prof. Dr. Eng. Dan Pitica, Prof. Dr. Eng. Ciascai Ioan, Assoc. Prof. Dr. Eng. Gabriel Chindriş; Prof. Dr. Eng. Ovidiu Pop, Assoc. Prof. Dr. Eng. Liviu Viman, Assoc. Prof. Dr. Eng. Septimiu Pop, Lect. Dr. Eng. Vlad Bande, Lect. Dr. Eng. Mihai Dărăban, Lect. Dr. Eng. Raul Fizeşan, Lect. Dr. Eng. Rajmond Jánó, Lect. Dr. Eng. Adrian Tăut, Lect. Dr.Eng. Ionel Baciu, Assist.Dr. Eng. Alexandra Fodor, PhD student Eng. Marius Taut; PhD student Eng. Adelina Ilies; PhD student Eng. Elena Mirela Stetco, Eng. Aurelia Haragus;

Representative projects

"**Test environment development for ECU/TCU software for Continental AG, Germany**" – director Assoc.Prof. Gabriel Chindriş, PhD;
"**Development and maintenance of a SIL/HIL testing model for automotive ECU/TCU for Continental AG, Germany**"

– director Assoc.Prof. Gabriel Chindriş, PhD;
"**Induction Cooking Project**", research project no. 3/5.03.2008, Diehl-AKO Stiftung&Co.Kg Germany – director lect. eng Ovidiu Pop, PhD;
"**Stop/Start System for double clutch TCU**" - Continental AG, Germany – director Assoc.Prof. Gabriel Chindriş, PhD;
"**Embedded Data Logger for Heart Rate**" – Blatand GmBH, Germany - director Assoc.Prof. Gabriel Chindriş, PhD;

Significant results

The most representative publications of the past 5 years:

1. Alexandra Fodor, Gabriel Chindris, Rajmond Jano, and Dan Pitica, Thermal Modelling and Simulation Techniques for Multicore Processors, 42nd International Spring Seminar on Electronics Technology, ISSE 2019, Wroklaw, Poland, ISBN 978-83-7493-070-3
2. Marius Alexandru Taut, Gabriel Chindris, and Dan Pitica, Real-Time System with Integrated PID Algorithm used for DC Motor Control, 42nd International Spring Seminar on Electronics Technology, ISSE 2019, Wroklaw, Poland, ISBN 978-83-7493-070-3
3. Adelina Ioana Ilieș, Ioan Ciascai, and Dan Pitică, Methods for Reusing Li-ion Cells from Discarded Battery Packs, 42nd International Spring Seminar on Electronics Technology, ISSE 2019, Wroklaw, Poland, ISBN 978-83-7493-070-3
4. Mihai Alexandru Ilie, Elena-Mirela Stetco, Liviu Viman and Dan Pitica, AC Coupled Instrumentation Amplifier with Gyrators, 42nd International Spring Seminar on Electronics Technology, ISSE 2019, Wroklaw, Poland, ISBN 978-83-7493-070-3
5. Adelina Ioana Ilies, Dan Pitica, Gabriel Chindris, Alexandra Fodor, Test Bench for Electrical and Performance Evaluation of Lithium-Ion Batteries, 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN**:** 978-1-7281-3330-0
6. V. Bande, S. S. Pop, Triaxial Vibrating – Wire Transducer Implementation and Measurements, 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN**:** 978-1-7281-3330-0
7. S. Pop, V. Bande, Digital Processing Method used to Improve the Frequency Measurement Accuracy for Vibrating-Wire Transducers, 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN**:** 978-1-7281-3330-0
8. M.A. Dăbâcan, L. Viman, and V. Bande, New Laboratory Concept Used with the Data Acquisition System Fundamentals Course, 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN**:** 978-1-7281-3330-0
9. R. G. Voina, L. Viman and D. Pitica, Enhanced Stack-up for EMC, SI and PI in Mixed-Signal Systems, 2019 IEEE 25th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN**:** 978-1-7281-3330-0
10. M. A. Taut, G. Chindris, and D. Pitică, PID Algorithm used for DC Motor Control, 2018 IEEE 24th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN: 978-1-5386-5577-1
11. I. M. Alexandru, A. Grama, L. Viman and D. Pitica, FFT Radix2 Core implemented on FPGA with DSP48 slices, 2018 IEEE 24th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN: 978-1-5386-5577-1
12. R. Fizesan, and O. Pop, PI timing measurements in high speed flash memory embedded systems, 2018 IEEE 24th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN: 978-1-5386-5577-1
13. Marius Alexandru Taut, Gabriel Chindris, Adrian Catalin Taut, and Dan Pitica, Model-in-the-Loop for Determining the Speed and Position of a DC Motor, 41st International Spring Seminar on Electronics Technology (ISSE), Zlatibor, Serbia, ISBN: 978-1-5386-5731-7, ISSN: 2161-2536
14. Adrian Taut, Gabriel Chindris, Mihai Daraban, Marius Taut, Resonant Power Converters used for Wireless Power Transfer, 41st International Spring Seminar on Electronics Technology (ISSE), Zlatibor, Serbia, ISBN: 978-1-5386-5731-7, ISSN: 2161-2536
15. Elena Mirela Stetco, Ovidiu Aurel Pop, Alin Grama, Doris Csipkes, Design, Modelling and Simulation of a Fifth Order Low-Pass Gm-C Filter, 2018 41st International Spring Seminar on Electronics Technology (ISSE), Zlatibor, Serbia, ISBN: 978-1-5386-5731-7, ISSN: 2161-2536 , DOI: 10.1109/ISSE.2018.8443770 , WOS:000449866600091
16. Elena-Mirela Stetco; Ovidiu Aurel Pop; Alin Grama; Doris Csipkes ; Emilian Ceuca, Design and Simulation of a Sixth Order Band-Pass Gm-C Filter, 2018 IEEE 24th International Symposium for Design and Technology in Electronic Packaging (SIITME), ISBN: 978-1-5386-5577-1, DOI: 10.1109/SIITME.2018.8599271
17. Daraban, Mihai; Chindris, Gabriel; Taut, Adrian; et al., Uncertainty Budget for Hardware-In-the-Loop Test System 41st International Spring Seminar on Electronics Technology (ISSE) Location: Zlatibor, SERBIA Date: MAY 16-20, 2018, Book Series: International Spring Seminar on Electronics Technology ISSE Published: 2018

The offer addressed to the economic environment

Research & development	Calculus, design, simulation and analysis of power electronics circuits; Numerical methods of analysis; Control algorithms;Transducers physics;Electronic materials; Software, hardware and testware for embedded systems; Real-time measurements;Power electronics;Power dam SCADA systems; Applied electronics for white-goods;
Consulting	Electronics circuits and devices modeling and simulation; IP and patent analysis; Test equipment proof-of-concept; Design for technological transfer (DFx); EMI/EMC in PCB; PCB/PWB design; Software for embedded; Measurement, analysis and simulation for electronics;Real-time systems calibration; Design of electronics systems;
Training	LabVIEW training; Training for modeling and simulation; Training for embedded and real-time systems; Training for PCB design; Training for measurements, analysis and testing;

Last updated: May2020