DEPARTMENT OF INFORMATION ENGINEERING AND PROCESS CONTROL

NEWSLETTER 2025

A WORD FROM THE HEAD OF THE DEPARTMENT

Dear colleagues, partners, and friends,

As the year nears its end, it is time to reflect on our achievements. In the year, we continued strengthening our scientific reach by organizing some prestigious conferences and workshops.

We have successfully organized the 25th International Conference-2025 in the High Tatras under the auspices of IEEE and IFACx, followed by the successful organization of the 14th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems (DYCOPS 2025).

The successful completion of the FrontSeat project significantly boosted our internal development and international collaboration, with several lectures by national and international guests.

My heartfelt congratulations to our master's students, who successfully defended their theses before an international committee. Also, congratulations to our best master's theses awardees for their outstanding master's theses.

prof. Ing. Miroslav Fikar, DrSc.

From left: M. Fikar, Gy. Kurucz, B. Kumar, R. Fáber, M. Kalúz, R. Babas, D. Šišoláková, P. Bakaráč, K. Macušková, R. Paulen, E. Plšičík Pavlovičová, M. Wadinger, L. Galčíková, J. Holaza, D. Dzurková, M. Horváthová, P. Valábek, S. Serhiienko, J. Oravec.
Absent: T. Ábelová, M. Klaučo, A. Lohani, A. Mészáros, J. Mikleš, R. Trautenberger, J. Vargan, Ľ. Čirka.

INAUGURAL LECTURE

Assoc. Prof. Juraj Oravec, PhD, from the Institute of Information Engineering, Automation, and Mathematics (IAM) at FCHPT STU, has successfully delivered and defended his inaugural lecture titled "Advanced Predictive Controller Design for Real-Time Implementation."

He first presented and defended the lecture before the Scientific Council of FCHPT STU on 27 May 2025, followed by a successful defense before the Scientific Council of STU on 18 June 2025.

We extend our sincere congratulations and express our best wishes for continued success in future research and educational endeavors!

YEARLY UPDATES

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STUDENT AWARDS

IAM STUDENTS AWARDED FOR THE BEST MASTER THESES

Students who defended their outstanding master's theses were recognized for their hard work and dedication. Among the awarded group, three IAM students received special prizes from our industrial partners:

- **Ing. Branislav Daráš (Actemium),**
- **Ing. Radovan Reich (Humusoft),**
- **Ing. Erika Zsideková (Siemens).**

IAM STUDENTS RECEIVED DEAN'S AWARDS

FCHPT STU held its annual Dean's Awards ceremony, where several of our talented students were honored. We are proud to celebrate five students who received awards in recognition of their effort, accomplishments, and active involvement.

For exceptional academic performance:

- **Bc. Michaela Belušková,**
- **Bc. Hana Melicherová.**

For representing the faculty and STU in sports:

- **Bc. Matúš Krivošík.**

For making a meaningful contribution to the faculty:

- **Ing. Erika Plšičík Pavlovičová,**
- **Ing. Marek Wadinger.**

Warm congratulations to all the awardees!

IAM STUDENTS DEFENDED THEIR MASTER THESES

On June 2, the defense of the master's theses was held at IAM. The following students successfully defended their diploma theses: **Ing. Tereza Almásiová, Ing. Branislav Daráš, Ing. Lukáš Chylý, Ing . Viktória Koncserová, Ing. Marko Micherda, Ing. Simona Pokorná, Ing. Ema Radačovská, Ing. Radovan Reich, Ing. Monika Řežuchová, Ing. Sofia Serhiienko**, and **Ing. Erika Zsideková**.
Congratulations to all students, and we wish you many more successes.

IAM STUDENTS DEFENDED THEIR BACHELOR'S THESES

On June 23, the defense of bachelor's theses was held at IAM. The following students successfully defended their bachelor's theses: **Bc. Richard Bielovič, Bibiana Dobrová, Bc. Filip Hlubík,** and **Bc. Viliam Vrba**.
Congratulations to all students, and we wish you many more successes.

PHD STUDENTS DEFENDED THEIR DISSERTATIONS THESES

On August 21, defenses of the dissertation theses took place at the IAM.
Ing. Kristína Fedorová, PhD., defended her dissertation on "Structure-Exploiting Model Predictive Control for Real-Time and Embedded Applications." The supervisor of this work was Prof. Ing. Michal Kvasnica, PhD.
Ing. Roman Kohút, PhD., defended his dissertation on "Enhancing Energy Efficiency: Advanced Forecasting Algorithms for Energy Management Systems." The supervisor of this work was Prof. Ing. Michal Kvasnica, PhD.
We heartily congratulate you and wish you much success in your future work and personal life.

JOURNAL ARTICLES

T. Ábelová – **M. Wadinger** – **M. Kvasnica**: Predictive risk-aware control for microgrids: Operation of a revenue-generating energy management system. Sustainable Energy, Grids and Networks, 2025.

Y. Jiang – **K. Fedorová** – J. Su – **J. Oravec** – B. Houska – C. Jones: A Real-Time Parallelizable MPC for Embedded Systems. European Journal of Control, 2025.

R. Kohút – **M. Klaučo** – **M. Kvasnica**: Unified carbon emissions and market prices forecasts of the power grid. Applied Energy, 2025.

B. Kumar – M. Malik: Total controllability of positive switched dynamic systems with non-instantaneous impulses using non-uniform time domains. IMA Journal of Mathematical Control and Information, pp. 1–28, 2025.

B. Kumar – M. Malik: Analysis of finite-time stability and stabilization for nonlinear hybrid singular time-varying switched impulsive systems and applications to neural networks. International Journal of Systems Science, pp. 1–22, 2025.

B. Kumar – M. Malik: Total controllability and observability analysis of nonlinear singular switched impulsive systems on time scales. Journal of Control and Decision, pp. 1–18, 2025.

B. Kumar – M. Malik: Finite-time stability and stabilization of positive switched delay systems with non-instantaneous impulses on time scales and applications to multi-agent systems. Nonlinear Analysis: Hybrid Systems, 2025.

A. Maidi – **R. Paulen** – J. Corriou: Zeroing Dynamics-Based Stabilizing Controller Design of Diffusion-Reaction Systems. 2025.

M. Markowski – M. Trafczynski – **E. Pavlovičová** – **J. Oravec**– S. Alabrudzinski– P. Kisielewski– K. Urbaniec– K. Elwertowski– D. Gostynski: Impact of Industrial Constraints on the Dynamic Performance of a PID-Controlled Hybrid Heat-Integrated Distillation System with a Plate Heat and Mass Exchanger. International Journal of Heat and Mass Transfer, 2025.

E. Pavlovičová – **J. Oravec** – M. Trafczynski– M. Markowski – S. Alabrudzinski – P. Kisielewski – K. Urbaniec: Energy and Carbon Footprint Reduction for Hybrid Heat-Integrated Distillation Systems: Robust Model Predictive Control Approach. Energy, 2025.

M. Wadinger – **R. Fáber** – **E. Pavlovičová** – **R. Paulen**: Carbon neutral greenhouse: Economic model predictive control framework for education. European Journal of Control, pp. 101297, 2025.

CONFERENCE PAPERS

On May 27-30, the **51st International Conference of the Slovak Society of Chemical Engineering (SSCHE 2025)** was held in Jasná, Demänovská Valley, Slovakia. Ing. Rastislav Fáber, Bc. Adam Fedor, Bc. Jakub Gaborčíkand doc. Ing. Radoslav Paulen, PhD. participated in this event.

On June 16-19, the **14th IFAC Symposium on Dynamics and Control of Process Systems**, **including Biosystems (DYCOPS 2025)** was co-organized by the Slovak University of Technology in Bratislava. The symposium brought together experts in process dynamics and control systems to explore recent theoretical advances and practical applications across various industries, including biosystems.

On June 3-6, we met again with our colleagues interested in process control at our **25th International Conference on Process Control 2025** in the High Tatras. The objective of the conference was to bring together theory experts and control systems practitioners to evaluate the new avenues for techniques, design procedures, and instruments in process control. Contributions range from theoretically rigorous research works to industrial applications. In addition to participants from Slovakia, the conference was attended by researchers from the Czech Republic, Hungary, Austria, Germany, Italy, Norway, Spain, and other countries.

CONFERENCE PAPERS

On July 6-9, the **35rd European Symposium on Computer-Aided Process Engineering (ESCAPE-35)** was held in Leuven, Belgium. On behalf of the IAM, the conference was attended by Prof. Ing. Miroslav Fikar, DrSc., doc. Ing. Radoslav Paulen, PhD., Dr. Mehmet Arici, Ing. Jozef Vargan, and Ing. Rastislav Fáber.

On June 24-27, at the **23rd European Control Conference (ECC 2025)** in Thessaloniki, Greece, our institute was represented by Ing. Marek Wadinger and doc. Ing. Radoslav Paulen, PhD.

On July 8-10, our colleagues Ing. Juraj Holaza, PhD. and doc. Ing. MSc. Martin Klaučo, PhD. proudly represented IAM at the prestigious **American Control Conference (ACC 2025)** conference in Denver, Colorado.

CONFERENCE PAPERS

On 10-12 December, the **64th IEEE Conference on Decision and Control (CDC 2025)** was held in Rio de Janeiro, Brazil. Ing. Erika Plšičík Pavlovičová, Ing. Marek Wadinger, and Ing. Lenka Galčíková, PhD. took part in the conference.

Dr. Bhim Kumar represented our institute at the **11th Indian Control Conference (ICC 2025)**, which was held from 18 to 20 December at the Indian Institute of Science (IISc) in Bengaluru, India.

INTERNATIONAL PROJECTS

FrontSeat

STUBA RUB UNIPI

The project aims at increasing the research and academic prospects of the Slovak University of Technology in Bratislava, Slovakia (STUBA) and at initiating the evolution of STUBA into a modern, reputable, excellent institution that performs high-quality research in advanced automatic control, educates top-quality scholars and industrial practitioners, and is successful in active dissemination and exploitation of its research and innovation efforts. For this purpose, STUBA teams up with two renowned research groups in automatic control from Ruhr-Universität Bochum, Germany (RUB), and Università di Pisa, Italy (UNIPI). The specific goals of the action are to reinforce the collaboration with the two research groups from Western Europe, to intensify research in advanced automatic control, to open up new collaboration channels through academic and industrial networking, to train excellent young/senior researchers and project managers, and to effectively disseminate and exploit the research results of STUBA. The unique features of the project are adoption/amendment of internal research project-related rules and procedures and development of a project management toolbox; research efforts aiming at the continued creation of high-quality research results and software tools; establishment of a series of guest scientific and academic lectures; exchanges and training of project managers and research (junior and senior) personnel; organization of conferences and invited sessions, seminars with industry, and annual summer schools; preparation and implementation of a new PhD curriculum at STUBA; and establishment of an academic-industrial research and innovation cluster.

Visit the official website and subscribe to the project newsletter on the bottom of the page.

101180351: Smart Chemical Engineering for Sustainable Development (M. Fikar)

The Smart Chemical Engineering for Sustainable Development EMDM project is a groundbreaking initiative addressing the urgent need for sustainable development in chemical engineering. Led by high-ranking ENSIC Université de Lorraine, in collaboration with a consortium of partners with complementary expertise (Slovak University of Technology, Hasselt University) associated to La Sapienza, this project endeavors to design a High-Quality European Master Programme in Chemical Engineering that aligns closely with global and European sustainable development goals and the European chemical companies transition strategy.

France Excellence Eiffel Scholarship: Data-based Optimization and Control of an Industrial Process of Propylene Production (J. Vargan)

This project aims to develop optimization and control strategies based on data from an industrial process of polypropylene production operated by the Slovnaft company in Slovakia. The objective is to maximize profits while improving safety and quality control. Two institutions will lead the project in the framework of a dual (cotutelle) Ph.D. thesis between École Nationale Supérieure des Industries Chimiques at the University of Lorraine in Nancy and the Faculty of Chemical and Food Technology at Slovak University of Technology in Bratislava. The work will be carried out in close cooperation with the petrochemical refinery located in Bratislava.

NATIONAL PROJECTS

APVV-21-0019: Data-Based Process Control (M. Fikar)

The main aim of the proposed research project is to investigate and design new data-driven advanced methods of automatic control and monitoring in process industries to improve the efficiency of process plants, their monitoring, and process control, and to improve profitability, stability, and competitiveness.

VEGA1/0239/24: Advanced Control of Energy-Intensive Chemical-Technological Processes Using Learned Approximate Explicit Controllers (M. Klaučo)

The project will design tools to design approximate explicit controllers for complex chemical processes that optimize energy consumption and improve process efficiency. This project will use machine learning techniques to synthesize controllers for processes with a high number of states, parameters, and long prediction horizons, which is impossible with traditional approaches to the design of explicit Model Predictive Controllers.

VEGA 1/0297/22: Controller Design Methods for Low-Level Carbon Footprint Process Automation (J. Oravec)

The project aims to develop advanced controller design methods for low-level carbon footprint process automation. Decreased energy consumption is achieved by implementing the advanced methods of model predictive control. These methods are based on the robust control approach, parallel computing, machine learning, and economic criteria. The model predictive control methods will be designed considering the requirements of the chemical, biochemical, pharmaceutical, and food industries. However, the implementation range will not be limited just to these fields of industry. The theoretical results of the project will be implemented and experimentally analyzed using laboratory devices. The practical aspects of implementation on standard industrial hardware will be considered to design the advanced control methods for low-level carbon footprint process automation.

VEGA 1/0490/23: Economically Efficient Predictive Control of Microgrids (M. Kvasnica)

The content of the project, which falls into the scientific field of automation, is basic research in the development of a comprehensive concept of design, synthesis and implementation of an automated system for cost-effective management of local power systems (microgrids) where own consumption is partially or completely covered by own production sources (often renewable energy sources such as solar panels and wind turbines), supplemented by 34energy storage systems and rotating assets. The proposed system will ensure the optimal utilization of individual assets so that the economy of operation is maximized and adverse effects on the environment are minimized. The main advantage of the proposed solution compared to the existing approaches is the integrity and conceptuality of the entire system, where the individual modules communicate with each other and increase the economic profitability of the entire system through a synergistic effect.

Early Stage Grant STU: Streamlined Operations with Modeling and Integrated Data Strategies (R. Fáber)

This project centers on enhancing process control by analyzing raw industrial data to optimize overall process operation and refine anomaly detection techniques for real-time measurements. Our approach involves the design of a hybrid model, merging data-based methods with first-principles modeling within the AVEVA Process Simulation environment. This approach facilitates data generation and simulates operational changes without impacting the actual process. Collaboration with our industrial partner, Slovnaft, a.s., focuses on the alkylation process. The resulting framework integrates optimization methodologies and machine learning for industrial data verification and production monitoring. Upon successful validation of proposed solutions, we will provide comprehensive documentation for future reference. The algorithm we develop will be available for unrestricted use by both our industrial partner and students within our faculty as an educational model.

09I03-03-V04-00636: Advanced Control Solutions Towards Resource Efficient Production (M. Horváthová)

The current state of control methods for industrial plants often lacks a dedicated focus on energy efficiency while maintaining the guarantees of safe operation. Existing control strategies prioritize performance but neglect the optimization of energy consumption and computational complexity. Additionally, the integration of control algorithms onto embedded industrial hardware with limited computational and memory capacity remains a challenge. This project proposes energy-efficient control methods that surpass existing solutions by ensuring stability, efficiency, and performance. By addressing these challenges and introducing advancements, the project contributes to the state of the art in control systems and offers practical solutions for industrial applications.

09I03-03-V04-00530: Development of reliable and explainable models for industrial monitoring, optimization, and control (R. Paulen)

The DREAMINC project aims to revolutionize soft sensor technology, enhancing the safety and sustainability of chemical industries. Led by Prof. Radoslav Paulen, this interdisciplinary project focuses on three key goals: Interpretable Soft Sensors: Creating interpretable multi-linear models to efficiently capture complex process behaviors. Reliable Soft Sensors: Utilizing optimal experiment design and Bayesian-like approaches to improve model accuracy and identify knowledge gaps. Software Implementation: Developing an open-source toolkit for soft sensor design and conducting practical demonstrations. These innovations bridge the gap between theory and industrial practice, contributing to a more efficient, autonomous, and sustainable chemical industry. The project aligns with EU goals for green and digital transformation and involves collaboration with academic and industrial partners for practical impact.

09I01-03-V05-00002: Reliable Modeling, Estimation, and Control for Future Process Industry via Set-based Tools (R. Paulen)

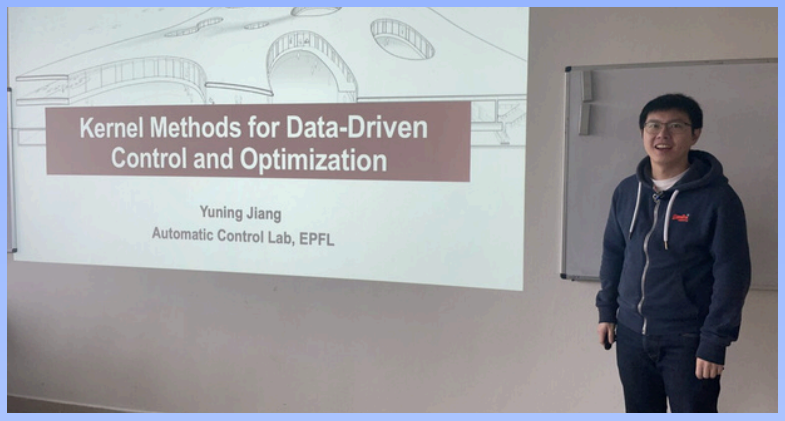
Project aims to establish a new domain within process systems engineering termed as reliable process systems engineering utilizing set-based tools. In an era dominated by digitization, IoT, and burgeoning AI applications, model-based monitoring and control serve as crucial technology for real-time analysis and operation of process systems. These systems are instrumental in producing essential high-end consumer products, such as drugs, plastics, and fuels, pivotal for the sustenance of modern developed societies.

09I01-03-V04-00024: Slovak Research Excellence in Advanced Control for Smart Industries (M. Fikar)

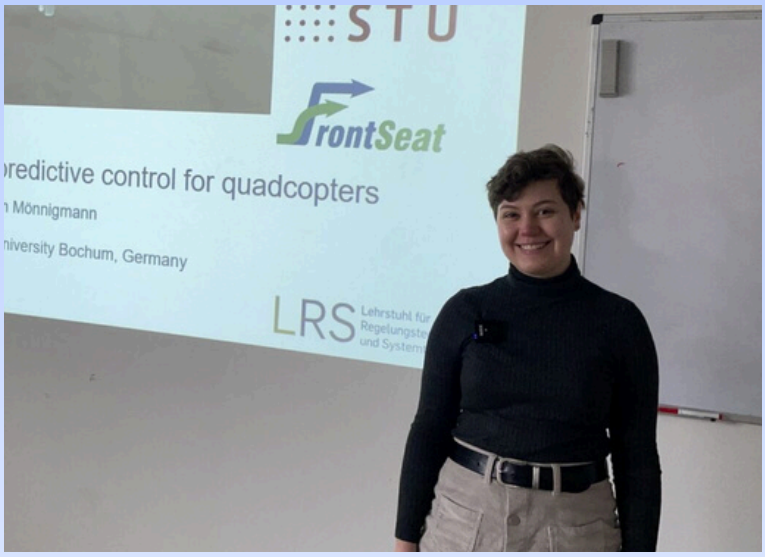
The project is oriented as complementary to the FrontSeat project supported by Horizon Europe. The aim is to carry out and fund complementary activities that were not considered in the original project. The main objectives of the project are: excellent research in the field of automatic control. Education and strengthening of research links in the field of automatic control. Development of infrastructure to support research in automatic control. The four faculties involved in the project are STUBA, the Faculty of Chemical and Food Technology (Institute of Information Engineering, Automation and Mathematics, project PI), the Faculty of Mechanical Engineering (Institute of Automation, Measurement and Applied Informatics), the Faculty of Materials Science and Technology (Institute of Applied Informatics, Automation and Mechatronics, Institute of Advanced Technology Research) and the Faculty of Electrical Engineering and Computer Science (Institute of Automotive Mechatronics, Institute of Robotics and Cybernetics).

SEMINARS AND WORKSHOPS

This year, an extraordinary number of seminars and workshops were held. We organized and participated in more than 19 of these events, and allow us to mention a few:



On January 16, we organized a scientific seminar on "Data-driven Control and Optimization with Kernel-based Learning". Yuning Jiang, a postdoctoral researcher at École Polytechnique Fédérale de Lausanne, Switzerland, led the seminar, which was organized in the framework of the FrontSeat project as part of the seminar series on "Research Seminar on Smart Cybernetics."



On March 28, we organized a scientific seminar on "Constraint removal in model predictive control for quadcopters". Nora Lindner, a PhD student at Ruhr University Bochum, Germany, led the seminar, which was organized in the framework of the FrontSeat project as part of the seminar series on "Research Seminar on Smart Cybernetics."

On June 13, we organized a scientific seminar titled "Industry 4.0 and Plant Automation: Understanding the Requirements and Needs". Yuri Shardt, a professor at the Technical University of Ilmenau, led the seminar, which was organized within the framework of the FrontSeat project as part of the "Research Seminar on Smart Cybernetics" series.

On June 20, we organized a scientific seminar titled "Process Control: Applications in a Chemical Industry." Lief Krister Forsman, who is with Perstorp Specialty Chemicals and the Norwegian University of Science and Technology, led the seminar, which was organized within the framework of the FrontSeat project as part of the "Research Seminar on Smart Cybernetics" series.

SEMINARS AND WORKSHOPS

On July 22, we organized a scientific seminar titled “Polyhedral Control Design: Advances in Theory, Methods, and Applications.” Boris Houska, a professor at ShanghaiTech University, led the seminar, which was organized within the framework of the FrontSeat project as part of the “Research Seminar on Smart Cybernetics” series.

On October 15, we organized a scientific seminar titled “Advanced Control Approaches for Optimal Operation of Complex Processes”. Johannes Jäschke, a professor at Norwegian University of Science and Technology, led the seminar, which was organized within the framework of the FrontSeat project as part of the “Research Seminar on Smart Cybernetics” series.

As part of the Final FrontSeat Consortium Meeting at STUBA (25–26 September 2025), the scientific program featured an inspiring seminar by Prof. Michal Kvasnica from the Slovak University of Technology in Bratislava. His lecture, entitled “Building an Energy Management System from Scratch: Challenges and Opportunities”, brought fresh insights into one of the most pressing topics in modern control engineering.

Prof. Kvasnica challenged the common perception that energy management systems are mainly about advanced algorithms. Instead, he emphasized that long-term success requires a broader perspective:

- Reliable predictive data to anticipate future scenarios,
- Systematic identification of revenue streams to ensure economic viability, and
- An efficient IT infrastructure to support real-time decision-making.

The talk highlighted how optimization in this context must operate on two complementary levels. At the static level, designers face the sizing problem – selecting the right mix of assets that keep the economics favorable under uncertainty. At the dynamic level, the system must continuously orchestrate the microgrid, predicting the near future and adapting in real time to maximize profitability while maintaining feasibility.

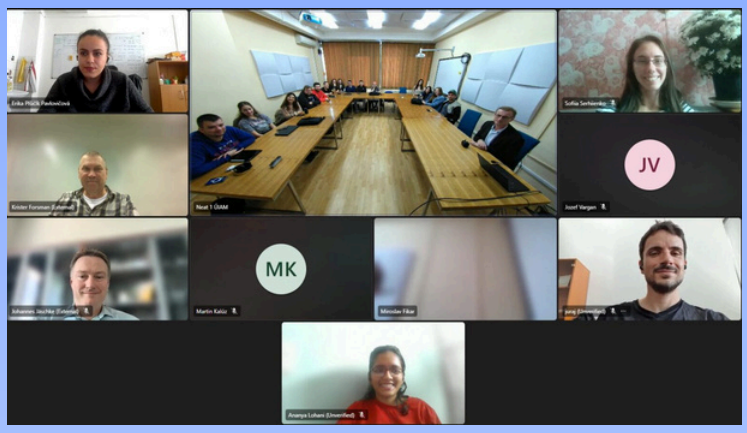
EXCURSIONS TO INDUSTRY

IAM organized several excursions to industrial plants for our students. On 23 October, our 3rd- and 4th-year students visited Actemium, where they had the chance to experience the world of industrial automation firsthand. The excursion offered them an authentic insight into how industrial control works outside classrooms and laboratories—exactly where theory transforms into real practice.

HANDS-ON PRACTICE AT THE TRAINING CENTER

Students of the fifth grade within the subject Process Control Project graduated on the December 1-5 training at the Unipetrol Training Center in Litvínov, Czech Republic. The training focused on the control of real processes and was led by experienced practitioners. The students thus acquired new knowledge and skills that will help them in solving problems in their future job.

EDUCATIONAL LECTURES FROM INDUSTRY



On October 22, 2025, the Institute of Information Engineering, Automation, and Mathematics (FCHPT STU) hosted a professional seminar titled “Process Control: A Practical View from the Chemical Industry.” The lecture was delivered in a hybrid format by Dr. Krister Forsman from Perstorp Group (Sweden) and NTNU (Norway). The seminar was organized for students of Theory of Automatic Control I and III, as well as for master’s students in Cybernetics, providing them with an industrial perspective on advanced process control.

From September 1 to 5, ACS welcomed students and researchers to the summer school “Optimization-Based Embedded Control Systems,” organized as part of the EU Horizon project FrontSeat. Over five intensive days, participants explored how modern optimization and model predictive control (MPC) techniques can be brought from theory into practice on real embedded platforms such as microcontrollers and industrial PCs. The program combined lectures on the key principles of control and optimization with hands-on sessions, where attendees tested their skills through guided exercises on embedded hardware.

OUTREACH EVENTS

Throughout the year, IAM actively engaged with high-school students, future applicants, and young science enthusiasts through a series of outreach events.

On Tuesday, 28 January, we took part in DRAFT GJH 2025 at Gymnázium Jura Hronca in Bratislava, where we introduced students to the study opportunities at FCHPT. At our booth and during the presentations we delivered, visitors learned more about our degree programs, Erasmus+ opportunities, and the hands-on experience they can gain during their studies.

From 30 January to 3 February 2025, FCHPT once again opened its doors to curious minds during CHEMWEEK 2025. High school students had the unique chance to step inside our laboratories and explore the world of chemistry and modern technologies firsthand.

The new academic year officially began on Thursday, 11 September, when we welcomed our first-year students and showed them that studying at IAM is about much more than lectures. Senior students introduced them to our projects, shared their experiences, and offered tips on how to succeed—and enjoy their time at the institute.

OUTREACH EVENTS

On 26 March, our faculty hosted CHEMDAY, a major fair bringing together chemical, food, and pharmaceutical companies. The event offered students a valuable opportunity to meet potential employers and explore career paths. As part of the program, we presented our study fields, Automation and Informatization in Chemistry and Food Engineering, and Cybernetics in Chemical and Food Technologies, which will launch in September in cooperation with UCT Prague.

On 25 June, we welcomed curious students and young science fans once again. From a lecture on How Does Artificial Intelligence Think? by Assoc. Prof. Juraj Oravec to interactive activities on automation and optimization, our booth and laboratories were buzzing with ideas and inspiration.

On Friday, 26 September, you could meet us at Bratislava's Old Market Hall during the European Researchers' Night. Our team from the Institute of Information Engineering, Automation, and Mathematics showcased what modern control looks like in practice. Visitors discovered how artificial intelligence can run on a small microcontroller, how sensor data is collected and analyzed, and how models and predictions support intelligent decision-making. We demonstrated how digital and industrial technologies are increasingly interconnected, opening new possibilities for manufacturing, logistics, and energy systems.

INFRASTRUCTURE

INTERNET OPTICAL

This year, we have upgraded our internet to the optical fiber infrastructure, which is forming the high-speed, high-bandwidth backbone of the modern internet in the department. This upgrade can transmit data at light speed with massive capacity, less signal loss (attenuation) over long distances, and immunity to electromagnetic interference. Before that, our department was using 1Gbps, but now we have access to 10Gbps internet speed.

RESEARCH LABORATORIES

Laboratory of Process Control

Control of specific processes via MATLAB and internet access

- Distillation Column Armfield UOP3CC
- Membrane Process SUPER RO BM 30
- Multifunction Station Armfield PCT40
- Hydraulic System with Storage Tanks DTS200
- Training Station Armfield PCT23
- Smart Eco Greenhouse VESNA

Laboratory of Control Systems

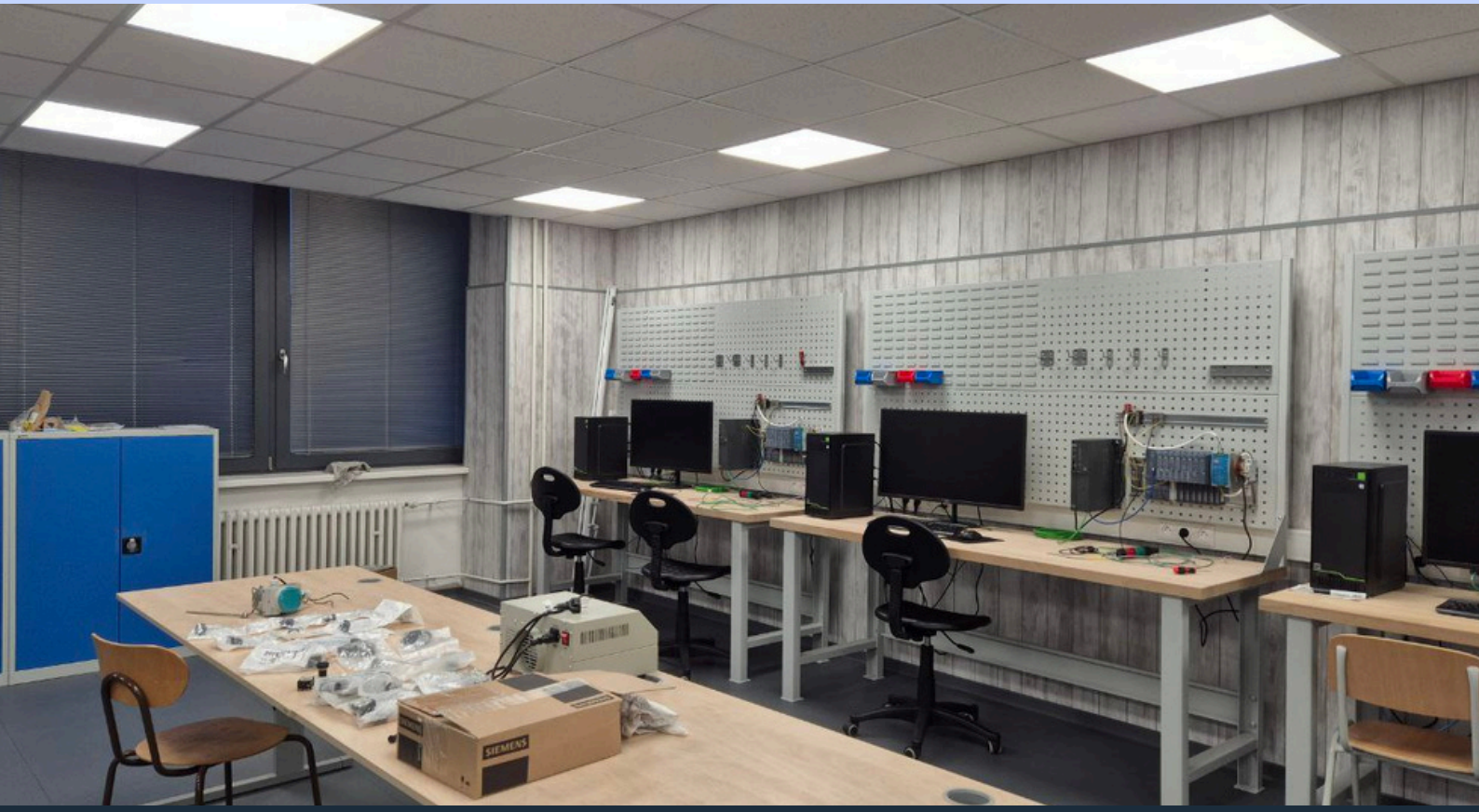
- Flexy 2.0
- Linear Inverted Pendulum
- Rotary Inverted Pendulum (Furuta)

Laboratory of Industrial Technology

- Siemens-SIMATIC S7-1200, 1500, HMi (PLC)
- Siemens-SIMATIC S7- 400, ET 200SP, PCS 7 (DCS)
- Yokogawa CENTUM VP (DCS)

Computer Laboratories

- Linux-based PCs, Raspberry Pi
- ESP32
- 3D Printer



INDUSTRIAL PARTNERS

IAM cooperates in scientific research, as well as, in supporting talented students with the following companies:

ACTEMIUM

HUMUSOFT®

Honeywell

REPAR Building Control

TESLA Blue Planet

SIEMENS

Slovnaft MEMBER OF MOL GROUP

Unipetrol ORLEN GROUP

YOKOGAWA

SOCIAL MEDIA CONTEST WITH HUMUSOFT AND MATLAB ACADEMY

Students may win motivational items (smartwatches and interesting promotional items) from HUMUSOFT when they present a certificate from the MATLAB-ACADEMY self-paced online courses. As part of the MATLAB-STU Campus-Wide License, all STU students have access to a wide range of professionally prepared online courses. They can take a course in linear algebra, solving differential equations, programming, machine learning, and much more.

HUMUSOFT®

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