Thursday, October 3th
National House of Science and Technique

Sofia, 108 Rakovski Str.

9.00 - 16.00 Conference Registration

10.00 - 10.20 - WELCOME AND OPENING CEREMONY
  Place: Hall 4
  Chairman: K.Boshnakov

10.20 - 10.50 - …………………..
Speech for Prof. John Atanasoff

10.50 - 11.30 PLENARY SESSION
  Place: Hall 4
  Chairman: Acad. V. Sgurev

Acad. Mincho Hadjiski
Cyber security of industrial control systems

11.30 – 13.00 Lunch time

13.00 – 18.30 SCIENTIFIC SESSIONS
  Place: Hall 105a, Hall 3

17.30 – 18.30 DISCUSSION
  Digitalization of the higher education on automation and informatics
  Place: Hall 3
  Moderator: A.Smrikarov

18.30 – 20.30 CONFERENCE COCKTAIL
  Place: Hall 1

13.00 - 15.00 SESSION A11 "CONTROL THEORY"
Place: Hall 105a
Chairman: N. Madjarov

T.Slavov, J.Kralev, P.Petkov
Embedded Robust Control of Multivariable Plants

K.Perev
Cross Gramian Orthogonal Approximation by Using a State Equation Integration Formula

V. D. Dimitrov, L. D Popov
Method of Fully Operational Identification of Slow-response Objects with Variable Parameters

H. Stoycheva, D. Chantov
Design of Chaotic Synchronization System Combining Projective, Marginal and Hybrid Synchronization

N. Nikolov, I. Grigorov
Matlab Modeling of a System for Adaptive Modal Control of SISO Objects

15.00 – 15.30 Coffee break

15.30 - 17.30 SESSION A12 "CONTROL APPLICATION"
Place: Hall 105a
Chairman: E. Nikolov

S.Yordanov , K. Ormandjiev , G. Mihalev
Robust Control of Cross-flow Water Turbine

Y. Boneva
Fixed-time Signal Plans Versus Actuated Control of Traffic Lights – Case Study of Shipchenski Pprohod Blvd. in Sofia, Bulgaria

V. Hristov, St. Petrov
Solar Tracking System by Microcontroller Arduino

E. A. Dimitrova
GPS Dispatch System for Monitoring and Control in Automobile Transport

T.Todorov
Identification of Sunflower Oil with "Electronic Nos" System Based on Gas Sensors

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13.00 – 15.00 SESSION B11 "MODELING AND PROCESS CONTROL"
> **Place: Hall 105a**
> **Chairman:** K. Boshnakov

M.Hadjiski , N. Deliiski, N. Tumbarkova
Mathematical Description of the Latent Heat of Liquid Fluids During Their Vaporization

N. Deliiski, N. Tumbarkova, N. Trichkov, Z. Gochev, D. Angelski
Modelling of the Temperature Conductivity of Flat Wood Details During their one Sided Heating Before Bending

I.Simeonov, E. Chorukova, V. Akivanov
Bioreactor Cascade Management System for Hydrogen and Methane from Organic Waste

M.Petrov
A Promethee II Method for Selection of Growth Rate Models of Saccharomyces Cerevisiae Yeast using Different Mixing Systems

K.Arabadzhiev
Cask Ale Brewery Control System

15.00 – 15.30 Coffee break

15.30 - 17.30 SESSION B12 "MANAGEMENT OF ORGANIZATIONAL SYSTEMS"
           Place: **Hall 3**
           Chairman: I.Batchkova

D. Nikolov, M. Lazarova
Methods and Algorithms for Optimization in Resource Planning and Business Process Management in Enterprises

R. N. Hrischev
ERP Systems in Packaging Industry from Corrugated Board. Tipical Features

K. Kolchakov, V. Monov
Performance of an Algorithm for Non-conflict Schdule in a Packet Switch with Large Scale Connections Matrix

R. Draganov, K. Haralampiev, P. Ruskov
Modeling Intelligent Ecosystems in Tourism

9.00 - 10.20 SESSION A21 "ROBOT VISION"
        Place: Hall 105a
        Chairman: R. Trifonov

G.Mihalev, S. Yordanov, T.Todorov
Study of Calibration Process of Camera Through Industrial Robot – Part 1

G.Mihalev, S. Yordanov, T.Todorov
Study of Calibration Process of Camera Through Industrial Robot – Part 2

D. Slavov
Autonomous Mobile Robot Control Using Machine Vision Camera

D. Slavov
Autonomous Robotic Line Tracking System

10.20 – 10.40 Coffee break

10.40 - 11.45 SESSION A22 "ROBOTICS – THEORY AND APPLICATION"
        Place: Hall 105a
        Chairman: S. Yordanov

S. Sherif, J. Kralev, T. Slavov
Synthesis of a Linear-quadratic Controller for Stabilization of a Walking Humanoid Robot

G. Pavlova, R. Trifonov, G. Tsochev
Humans and Robots Collaborative Work Problems

N. Angelov
Influence of Speed and Frequency on Laser Marking of Products From Steel 41Cr4

11.45 – 12.30 CELEBRATION THE ANNIVERSARY OF PROF. JOHN ATANASOFF - in front of the monument

12.30 -14.00 Lunch time

14.00 - 15.40 SESSION A23 "INTELLIGENT LEARNING AND EDUCATION (1)"
   Place: Hall 105a
   Chairman: I. Popchev

A.Toskova
Conceptual Model of Recommended System in Intelligent Game-based Learning Platform

S.Stavrev
Fluurmat – a Stem-based Teaching Platform

S. Tsolova
Results from Approbation of Innovative Methodology for Education with Innovative ICT Tools

I.Velcheva
Group and Team Work in Informatics Training Through Brainstorming Method

15.40 – 16.00 Coffee break

16.00 - 17.40 SESSION A24 "INTELLIGENT LEARNING AND EDUCATION (2)"
   Place: Hall 105a
   Chairman: L. Doukovska

K. Metodiev, D. Gocheva
Development of Standalone Applications for Teaching Materials for Industrial Automation

G. Georgieva-Tsaneva
Research on the Use of Serious Education Games in Medical Education in Bulgaria

G. Stoitsov , G. Stoitsova
A Suggestion for Smart Classroom's Architecture in Primary Schoool

D. Hristov, G. Georgiev, A. Stoyanova-Doycheva
Academic Publication System

17.40 CLOSING CEREMONY

Place: Hall 3

9.00 - 10.20 **SESSION B21 "IMAGE PROCESSIN AND PATTERNRECOGNITION"**
Place: Hall 3
Chairman: M. Lazarova

M. Petrov
Wavelet Based Systems for Searching for Magnetic Resonance Images Using the Matrix of Maximum Singularities

H. Stoycheva, G. Mihalev
Implementation of Chaotic Synchronization Schemes in PC Based Image Encoding Application

R. Raynova, M. Lazarova, A. Aleksieva-Petrova
Multiagent Multimodal Architecture for Emotion Recognition

V. Dimitrov , K. Kolev
Development of a Browser Based Strategy Game Application

10.20 – 10.40 Coffee break

10.40 - 11.45 **SESSION B22 "INTELLIGENT FAULT DETECTION AND ISOLATION"**
Place: Hall 3
Chairman: M. Hadjiski

S. Stankov
Finding Dangerous Objects with the Help of Artificial Neural Networks

G.Penchev
Early Failure Notification and Predicted Logistics Support Personal Assistant

G.Penchev
Early Failure Notification, Predicted Maintenance and Logistics Support System

E. Yilmazlar, H. Kuşçu, A. Güllü
Design and Development Voice-controlled Smart Assistant and Device Activity

11.45 – 12.30 CELEBRATION THE ANNIVERSARY OF PROF. JOHN ATANASOFF - in front of the monument

12.30 -14.00 Lunch time

14.00 - 15.40   SESSION B23 "DATA ANALYSIS, STRUCTURING AND PROCESSING"
          Place: Hall 3
          Chairman: E. Garipov

V. Hadjiev, A. Rashidov
Overview and Analysis of Methods and Models for Data Structuring, Storage and Processing in the Internet

V. Hadjiev, A. Rashidov
Overview and Analysis of Architectures for Data Structuring, Storage and Processing in the Cloud

A.Popov, S. Lekova
System for Monitoring and Analysis of the Environmental data - Part 1

A.Popov, S. Lekova
System for Monitoring and Analysis of the Environmental Data - Part 2

S. Lekova, D. Gocheva
Statistical Analysis of Measurement Data

15.40 – 16.00 Coffee break

16.00 - 17.40   SESSION B24 "COMPUTER NETWORKS"
Place: **Hall 3**
Chairman: K. Spassov

B. Toskov , A. Toskova
Smart Sensor Network

M.Petrov
Abstraction of Interval Temporal Programming Model Using Application Transpilation Process

V. Valkanov, M.Petrov
Application of Blocнchain Technologies for Tracking and Storing Education Progress

A. Panayotov, P. Ruskov
Car Renting via Blockchain Protocol

B.Belmahdi, K. Mazighi
Theoretical Analysis of an EDFA Amplifier Influence on WDM Optical Network

17.40 CLOSING CEREMONY

Place: **Hall 3**

		Hall 105a	Hall 3	Hall 4
Thursday, 3th October	10.00 – 10.20			Welcome and Opening Ceremony
	10.20 – 10.50			Speech for prof. John Atanasoff
	10.50 – 11.30			Plenary Session
	11.30 – 13.00	Lunch Time		
	13.00 – 15.00	Control theory	Modeling and process control	
	15.00 – 15.30	Coffee Break		
	15.30 – 17.30	Control application	Management of organizational systems	
	17.30 – 18.30	Discussion		
	18.30 – 20.30	Conference Cocktail – Hall 1		
Friday, 4th October	9.00 – 10.20	Robot vision	Image processing and pattern recognition	
	10.20 – 10.40	Coffee Break		
	10.40 – 11.45	Robotics – theory and application	Intelligent fault detection and isolation	
	11.45 – 12.30	Celebrating the Anniversary of Prof. John Atanasoff – in front of the monument		
	12.30 – 14.00	Lunch Time		
	14.00 – 15.40	Intelligent learning and education (1)	Data analysis, structuring and processing	
	15.40 – 16.00	Coffee Break		
	16.00 – 17.40	Intelligent learning and education (2)	Complex networks	
	17.40	Closing Ceremony		