

# Curriculum Vitae of Vladimír BOBÁL



## Personal information:

- Date of Birth: March 2nd, 1942,
- Place of Birth: Slavičín, region Zlín, Czech Republic,
- Marital Status: Married,
- Family Status: Two daughters,
- Nationality: Czech.

## Education and training:

- M.Sc. Mechanical Engineering, 1966, Faculty of Mechanical Engineering, Brno University of Technology, Czechoslovakia. Master thesis: Automatic draw-off conveyer for rubber extruder.
- Postgraduate Study in Automatic Control Engineering, 1973, Faculty of Mechanical Engineering, Department of Automatic Control, Czech Technical University, Prague, Czechoslovakia. Project thesis: Process Control of a Plastics Extruder.
- Ph.D. in Technical Cybernetics, 1982, Institute of Technical Cybernetics, Slovak Academy of Sciences, Bratislava, Czechoslovakia. Ph.D. thesis: Adaptive Control of a Plastics Extrusion Process.
- Habilitation in Technical Cybernetics, 1991, Faculty of Mechanical Engineering, Brno University of Technology, Czechoslovakia. Habilitation thesis: Algorithms of Self-tuning PID Controllers.
- Professor in Process Control, 2000, Faculty of Mechanical Engineering, Technical University of Ostrava, Czech Republic.

## Lecture courses:

- Adaptive and Predictive Control,
- System Identification.

## Managerial responsibility:

- Deputy Head of the Department of Process Control, Faculty of Applied Informatics (till 2006 Faculty of Technology) from 1990.
- Vice-Dean for Science and Research, Faculty of Technology in Zlín, Brno University of Technology Brno, from 1994 to 1996.
- Vice-Rector for Research Activities, Tomas Bata University in Zlín, from 2001 to 2004.

## Membership of scientific societies and organizations:

- Member of the Czech Chemical Engineering Society, from 1983.
- Member of the Czech Society of Cybernetics and Informatics, from 1994.
- Member of the Technical Committee on Chemical Process Control of the International Federation of Automatic Control (IFAC), from 1993.

## Posts held:

- Member of the Scientific Board of the Faculty of Applied Informatics, Tomas Bata University in Zlín, from 2006.
- Member of the Scientific Board of the Tomas Bata University in Zlín, from 2001.
- Member of the Scientific Board of the Faculty of Technology, Brno University of Technology (from 2001 Tomas Bata University in Zlín), from 1992 to 2006.
- Member of the Branch Board of doctoral study in “Technical Cybernetics”, Faculty of Applied Informatics, Tomas Bata University in Zlín, from 2000.
- Member of the Branch Board of doctoral study in “Engineering Informatics”, Faculty of Applied Informatics, Tomas Bata University in Zlín, from 2000.
- Member of the Branch Board of doctoral study in “Control Engineering and Robotics”, Faculty of Electrical Engineering”, Czech Technical University in Prague, from 2002.
- Member of the Branch Board of doctoral study in “Manufacturing Systems and Processes”, Faculty of Mechanical Engineering”, Technical University of Liberec, from 2002.
- Member of the sub discipline commission 102 “Electrotechnics and Cybernetics” of the Grant Agency of the Czech Republic from 2001 to 2006.
- Member of the Assessment Committee of the Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic, Prague, from 2009.

**Expertise:**

- System Identification, Adaptive Control Systems, Predictive Control Systems, Computer Aided Design for Control Systems, Applications of Modern Control Methods in Plastics and Chemical Technology.

**Study stays:**

- Ruhr - University of Bochum, Germany, 1994 - 3 weeks (Invited Lecture, Internal Report).
- Chalmers University of Goteborg, Sweden, 1994 - 1 week (Invited Lectur).
- University of Strathclyde, Glasgow, U. K., 1998, 2 weeks (Invited Lecture).
- Politecnico di Milano, Italy, 2002 - 1 week.

**Short visits of the foreign Universities:**

- Catholic University of Louvain Belgium, 1993 (Invited Lecture),
- University of Ghent, Belgium, 1993,
- Delft University of Technology, Netherlands, 1993,
- University of Brussels, Belgium, 1993,
- University of Stuttgart, Germany, 1993,
- Technical University of Darmstadt, Germany, 1993,
- University of Applied Sciences, Cologne, Germany, 2001 (Invited Lecture), 2002,
- University of Strathclyde, Glasgow, U. K., 2003 (Invited Lecture, preparing of the book for Springer-Verlag London),
- Politecnico di Milano, Italy, 2003 (Lectures – Socrates/Erasmus),
- University of Applied Sciences, Cologne, Germany, 2003 (Lectures – Socrates/Erasmus),
- Universidade Tecnica de Lisboa, Portugal, 2005 (Lectures – Socrates/Erasmus).

**Research Projects (from 2004):**

1. [MSM 281100001](#), The Automation of Technologies and Manufacturing Processes, project leader, 2001-2004.
2. [GACR 102/02/0204](#), Design of Intelligent Adaptive Control Systems, project leader, 2002-2004.
3. [GACR 102/03/0070](#), Application of Advanced Control Methods, member of research team, 2003-2005.
4. [110060 - CP -1-2003-1- DE - ERASMUS – TNPP: 05740 – 28211 – 99303420](#), ERIC – European Resources for Intercultural Communication, project leader for the TBU in Zlín, 2004-2006.
5. [GACR 102/05/0271](#), Predictive Control Methods: Algorithms and Implementation, project leader, 2005-2007.
6. [1M0567](#), Centre of Applied Cybernetics, project leader for the TBU in Zlín, 2005-2011.
7. [MSM 7088352101](#), Multifunctional Composite Systems Based on Natural and Synthetic Polymers, member of research team, 2005-2011.
8. [GACR 102/06/1132](#), Soft Computing Methods in Control, member of research team, 2006-2008.

**Reviews:****International Journals:**

International Journal of Adaptive Systems and Signal Processing, Control and Intelligent Systems, Industrial and Chemistry Research Journal, Computers & Chemical Engineering, International Journal of Systems Science.

**International Conferences:**

IFAC Symposia and Conferences, IEEE CCA/ISIC/CACSD Conferences, European Control Conferences, American Control Conference, Mediterranean Conferences on Control and Automation, IASTED Conferences.

**Other Activities:**

Organizer of the Special Session “**Predictive Control – Design and Applications**“, 28th IASTED International Conference Modelling, Identification and Control MIC 2009, Innsbruck, Austria.

## **Important publication and engineering activities:**

### **Scientific monographs:**

1. Bobál, V., Böhm, J., Prokop, R., Fessl, J. Practical Aspects of Self-tuning Controllers: Algorithms and Implementation (in Czech). VUTIUM Press, Brno University of Technology, 1999, 242 pp. (ISBN 80-214-1299-2).
2. Bobál, V., Böhm, J., Fessl, J., Macháček, J. Digital Self-tuning Controllers: Algorithms, Implementation and Applications. Advanced Textbooks in Control and Signal Processing. Springer-Verlag London, 2005, 317 pp. (ISBN 1-85233-980-2).

### **Contributions in the international journals:**

1. Bobál, V. Self-tuning Ziegler-Nichols PID controller. International Journal of Adaptive Control and Signal Processing, **9**, 1995, 213-226.
2. Bobál, V., Böhm, J., Prokop, R. Practical aspects of self-tuning controllers. International Journal of Adaptive Control and Signal Processing, **13**, 1999, No. 8, 671-690.
3. Dostál, P., Bobál, V., Fikar, M. One approach to adaptive control of continuous stirred time reactor. Selected Topics in Modelling and Control, **2**, 1999, 93-99.
4. Bobál, V., Macháček, J., Dostál, P. Multivariable adaptive decoupling temperature control of a thermo-analyzer. Journal of Systems and Control Engineering, **215**, 2001, 365-374.
5. Bobál, V., Macháček, J., Dostál, P. Multivariable adaptive decoupling temperature control of a thermo-analyzer. Journal of Systems and Control Engineering, **215**, 2001, 365-374.
6. Dostál, P., Bobál, V., Prokop, R. A new methodology of simple controller design for time delay systems. Part one – stable systems. Journal of Electrical Engineering, **52**, 2001, 134-138.
7. Bobál, V., Sysel, M., Dostál, P. Self-tuning controllers using  $\delta$  – model identification. International Journal of Adaptive Control and Signal Processing, **16**, 2002, 455-471.
8. Bobál, V., Dostál, P. Continuous-time self-tuning controller. Selected Topics in Modelling and Control, **3**, 2002, 80-85.
9. Macháček, J., Bobál, V. Adaptive PID controller with on-line identification. Journal of Electrical Engineering, **53**, 2002, 233-240.
10. Dostál, P., Bobál, V., Prokop, R. The simple controller design for unstable and integrating time delay systems using optimal control theory. Selected Topics in Modelling and Control, **3**, 2002, 69-73.
11. Dostál, P., Prokop, R., Bobál, V.: Polynomial design of simple controllers for time delay systems. Selected Topics in Modelling and Control, **3**, 2002, 74-79.
12. Perůtka, K., Bobál, V. An approach to decentralized adaptive control. Archives of Control Sciences, **13**, 2003, 33-46.
13. Dostál, P., Bakošová, M., Bobál, V.. An approach to adaptive control of a CSTR. Chemical Papers, **58**, 2004, 184-190.
14. Bobál, V., Chalupa, P., Dostál, P. Decentralized control of nonlinear systems using self-tuning controllers. Selected Topics in Modelling and Control, **4**, 2004, 160-165.
15. Dostál, P., Bobál, V., Gazdoš, F. Continuous-time adaptive control of MIMO nonlinear process using delta model parameter estimation. Selected Topics in Modelling and Control, **4**, 2004, 154-159.
16. Chalupa, P., Bobál, V., Dostál, P. Decentralized control of three tank system using logical supervisor. Annals of the University Craiova, **2 (29)**, 2005, 6-11.
17. Dostál, P., Bobál, V. Design of controllers for stable and unstable systems with time delay. Annals of the University Craiova, **2 (29)**, 2005, 17-22.
18. Kubalčík, M., Bobál, V. Adaptive control of coupled drives apparatus based on polynomial theory. Journal of Systems and Control Engineering, Proceedings of the Institution of Mechanical Engineers, **220**, 2006, 641-654.
19. Bobál, V., Chalupa, P., Dostál, P. Adaptive dual control of three tank system. AT&P journal plus 2, 2007, 99-104.
20. Dostál, P., Gazdoš, F., Bobál, V. Design of controllers for time delay systems Part II: Integrating and unstable systems. Journal of Electrical Engineering, **59**, No. 1, 2008, 3-8.
21. Dostál, P., Bobál, V., Gazdoš, F. Adaptive control of a nonlinear MIMO process using delta model parameter estimation. International Review of Automatic Control (IREACO) – Theory and Applications, **1**, No. 3, 2008, 272-279.

**Papers in the reviewed international conferences (from 2000):**

1. Bobál, V., Dostál, P., Macháček, J., Vítečková, M. Self-tuning PID controllers based on dynamics inversion method. In: Proc. of the IFAC Workshop on Digital Control – Past, Present and Future of PID Control, University of Catalunya, Terrassa, Spain, 2000, 183-188.
2. Bobál, V., Dostál, P., Sysel, M. Delta modification of self-tuning pole placement PID Controllers. In: Proc. of the 12th IFAC Symposium on System Identification, University of California, Santa Barbara, 2000, Paper ThMD1 - 3.
3. Bobál, V., Dostál, P., Kolomazník, K. Continuous-time self-tuning controller. In: Proc. of the 8<sup>th</sup> IEEE Mediterranean Conference on Control & Automation, University of Patras, Rion, Greece, 2000, Paper TA3-1.
4. Macháček, J., Bobál, V. Adaptive PID controller with on-line identification. In: Proc. of the IFAC Workshop on Digital Control – Past, Present and Future of PID Control, University of Catalunya, Terrassa, Spain, 2000, 495-500.
5. Bobál, V., Böhm, J. Matlab - Toolbox for design and verification of self - tuning controllers. Proc. of the IFAC Symposium on Advanced in Control Education, Gold Coast, Australia, 17 - 19 December 2000, Paper 10S - 1.
6. Dostál, P., Prokop, R. and Bobál, V. Polynomial design of simple controllers for time delay systems. In: Proc. of the 3<sup>rd</sup> IFAC Symposium on Robust Control Design ROCOND 2000, Prague, June 21-23, 2000, CD ROM, EUR-14.
7. Bobál, V., Bohm, J., Chalupa, P. MATLAB-toolbox for CAD of simple self-tuning controllers. In: Proc. of the 7<sup>th</sup> IFAC Workshop on Adaptation and Learning in Control and Signal Processing ALCOSP 2001, Cernobbio-Como, Italy, 2001, 273-278.
8. Bobál, V., Perůtka, K., Dostál, P. Decentralized adaptive continuous-time control of coupled drive apparatus. In: Proc. of the 7<sup>th</sup> IFAC Workshop on Adaptation and Learning in Control and Signal Processing ALCOSP 2001, Cernobbio-Como, Italy, 2001, 57-62.
9. Bobál, V., Sysel, M., Dostál, P. Some approaches to design of self-tuning controllers: algorithms and comparison. In: Proc. of the 3<sup>rd</sup> IEEE International Conference on Control Theory and Applications ICCTA'01, Pretoria, South Africa, 2001, 514-518.
10. Bobál, V., Sysel, M., Dostál, P. Continuous-time self-tuning controllers using delta model identification. In: Proc. of the European Control Conference ECC'01, Porto, Portugal, 2001, 1798-1802.
11. Dostál, P., Bobál, V., Blaha, M. One approach to adaptive control of nonlinear processes. In: Proc. of the IFAC Workshop on Adaptation and Learning in Control and Signal Processing ALCOSP 2001, Cernobbio-Como, Italy, 2001, 407-412.
12. Dostál, P., Bobál, V., Prokop, R. The design of simple controllers for unstable time delay systems using LQ control theory. In: Proc. of the European Control Conference ECC'01, Porto, Portugal, 2001, 3026-3031.
13. Dostál, P., Bobál, V., Gazdoš, F. One method of adaptive control of nonlinear processes. In: Proc. of the 3<sup>rd</sup> International Conference on Control Theory and Applications ICCTA'01, Pretoria, South Africa, 2001, 509-513.
14. Dostál, P., Bobál, V., Prokop, R. One approach to control of integrating and unstable time delay systems. In: Proc. of the 3<sup>rd</sup> International Conference on Control Theory and Applications ICCTA'01, Pretoria, South Africa, 2001, 499-503.
15. Kubalčík, M., Bobál, V. Adaptive control of a two input – two output system. In: Proc. of the 7<sup>th</sup> IFAC Workshop on Adaptation and Learning in Control and Signal Processing ALCOSP 2001, Cernobbio-Como, Italy, 2001, 163-168.
16. Bobál, V., Navrátil, P., Dostál, P. Adaptive control of a two input – two output system using delta models. In: Proc. of the 10<sup>th</sup> IEEE Mediterranean Conference on Control and Automation MED 2002, Lisboa, Portugal, 2002, Paper No. TUP4-5.
17. Bobál, V., Chalupa, P., Kubalčík, M., Dostál, P. Verification of decentralized control using simple self-tuning controllers in real time conditions. In: Proc. of the 4<sup>th</sup> Asian Control Conference, Singapore, 2002, 1418-1423.
18. Chalupa, P., Bobál, V., Dostál, P. Application of simple self-tuning controllers in decentralized control. In: Proc. of the IEEE International Conference on Control Applications, Glasgow, Scotland, 2002, 1276 - 1281.
19. Sysel, M., Bobál, V., Dostál, P. Delta adaptive control. In: Proc. of the 4<sup>th</sup> Asian Control Conference, Singapore, 2002, 111-116.
20. Dostál, P., Bobál, V., Sysel, M. Design of controllers for integrating and unstable time delay systems using polynomial method. In: Proc. of the 2002 American Control Conference, Anchorage, Alaska, USA, 2002, 2773-2778.
21. Dostál, P., Bobál, V., Gazdoš, F. Adaptive control of nonlinear processes using polynomial approach and LQ control technique. In: Proc. of the 10<sup>th</sup> IEEE Mediterranean Conference on Control and Automation MED 2002,

- Lisboa, Portugal, 2002, Paper No. 232.
22. Dostál, P., Bobál, V., Sysel, M. Design of proper controllers for unstable time delay systems. In: Proc. of the 4<sup>th</sup> Asian Control Conference, Singapore, 2002, 735-740.
  23. Kubalčík, M., Bobál, V. Adaptive control of coupled drives apparatus based on polynomial theory. In: Proc. of the IEEE International Conference on Control Applications, Glasgow, Scotland, 2002, 594 - 599.
  24. Kubalčík, M., Bobál, V. Polynomial design of controllers for two – variable systems – practical implementation. In: Proc. of the 15<sup>th</sup> Triennial IFAC World Congress, Barcelona, Spain, 2002, Paper No. 210.
  25. Navrátil, P., Dostál, P., Bobál, V. Adaptive control of TITO system using delta model. In: Proc. of the 5<sup>th</sup> Portuguese Conference on Automatic Control, Aveiro, Portugal, 2002, 114-119.
  26. Perůtka, K., Bobál, V. Decentralized adaptive control toolbox for Matlab: Alpha version. In: Proc. of the 5<sup>th</sup> Portuguese Conference on Automatic Control, Controlo 2002, Universidade de Aveiro, Aveiro, Portugal, 2002, 446-451.
  27. Bobál, V., Navrátil, P., Dostál, P., Sysel, M. Self-tuning control of MIMO systems: comparison 1DOF and 2DOF configurations. In: Proc. of the IAESTED International Conference on Circuits, Signals and Systems, Cancun, Mexico, 2003, 5 – 10.
  28. Bobál, V., Chalupa, P., Dostál, P. Usage of Self-Tuning Simulink Library for rel-time control. In: Proc. of the 1st African Control Conference AFCON 2003, University of Cape Town, South Africa, 2003, 196 – 201.
  29. Bobál, V., Chalupa, P., Kubalčík, M., Dostál, P. Self-tuning control: laboratory real-time education. In: Proc. of the 6<sup>th</sup> IFAC Symposium on Advances in Control Education, University of Oulu, Finland, 2003, 217-222.
  30. Sysel, M.; Bobál, V. Recursive system identification using delta models. In: Proceedings of the IASTED International Conference on Circuits, Signals and Systems, Cancun, Mexico, 2003, 264-268.
  31. Sysel, M., Bobál, V., Dostál, P. Delta adaptive control - 2DOF structure control loop. In: Proceedings of the 4<sup>th</sup> IEEE International Conference on Control and Automation, Montreal, Canada, 2003, P476.
  32. Dostál, P., Bobál, V., Gazdoš, F. Design of controllers for unstable time delay systems using polynomial method. In: Proceedings of the 11th IEEE Mediterranean Conference on Control and Automation MED 2003, Rhodes, Greece, 2003, Paper No. IV04-04.
  33. Dostál, P., Bobál, V., Gazdoš, F. Continuous-time adaptive control of MIMO nonlinear process using delta model parameter estimation. In: Proceedings of the IASTED International Conference on Circuits, Signals, and Systems, Cancun, Mexico, 2003, 23-28.
  34. Kubalčík, M., Bobál, V. Adaptive controller for two input - two output system - design and application. In: Proc. of the IEEE International Conference on Control and Automation, Montreal, Canada, 2003, 863 - 867.
  35. Kubalčík, M., Bobál, V., Navrátil, P. MIMO systems in education - theory and real time control of laboratory models. In: Proc. of the 6th IFAC Symposium on Advances in Control Education, Oulu, Finland, 2003, 293 - 298.
  36. Kubalčík, M., Bobál, V. Application of controllers based on polynomial methods to coupled drives laboratory process. In: Proc. of the IEEE Mediterranean Conference Control and Automation, Rhodes, Greece, 2003, Paper No. IV05 - 03.
  37. Bobál, V., Chalupa, P., Dostál, P. Real-time control using Self-tuning Controllers Simulink Library, In: Proc. of the 6<sup>th</sup> Portuguese Conference on Automatic Control CONTROLO 2004, University of Algarve, Faro, 2004, 405-410.
  38. Bobál, V., Chalupa, P., Dostál, P. Application of polynomial methods for design of adaptive decentralized control. In: Proc. of the IEEE International Symposium on Computer Aided Control Systems Design, Taipei, Taiwan, 2004, 115-120.
  39. Bobál, V., Chalupa, P., Dostál, P. Decentralized control of nonlinear systems using self-tuning controllers. In: Proc. of the IFAC Workshop on Adaptation and Learning in Control and Signal Processing ALCOSP 04, Yokohama, Japan, 2004, 385-390.
  40. Chalupa, P., Bobál, V., Dostál, P. Usage of logic supervisor for the design of adaptive decentralized control. In: Proc. of the 23<sup>rd</sup> IASTED International Conference Modelling Identification and Control, Grindelwald, Switzerland, 2004, 450-455.
  41. Novák, J., Bobál, V. Intelligent adaptive control using multiple models. In: Proc. of the 23<sup>rd</sup> IASTED International Conference Modelling Identification and Control, Grindelwald, Switzerland, 2004, 455-460.
  42. Dostál, P., Bobál, V., Gazdoš, F. One approach to control of time delay systems. In: Proc. of the 6th Portuguese Conference on Automatic Control, CONTROLO 2004, University of Algarve, Faro, Portugal, 2004, 451-456.

43. Dostál, P., Bobál, V., Gazdoš, F. Adaptive control of nonlinear processes: continuous-time versus delta model parameter estimation. In: Proc. of the IFAC Workshop on Adaptation and Learning in Control and Signal Processing ALCOSP 04, Yokohama, Japan, 2004, 273-278.
44. Dostál, P., Bobál, V., Tomašík, M. Application of polynomial method in control of time delay systems. In: Proc. of the IEEE Conference on Computer Aided Control Systems Design, Taipei, Taiwan, 2004, 89-94.
45. Kubalčík, M., Bobál, V. Application of decoupling controllers to coupled drives process. In: Proc. of the 5<sup>th</sup> Asian Control Conference, Melbourne, Australia, 2004, 1456 - 1462.
46. Kubalčík, M., Bobál, V. Adaptive decoupling control of a coupled drives apparatus. In: Proc. of the IASTED International Conference Modelling, Identification, and Control, Grindelwald, Switzerland, 2004, 433 - 437.
47. Kubalčík, M., Bobál, V., Chalupa. Adaptive control of twin rotor MIMO system: polynomial approach. In: Proc. of the 16th IFAC World Congress, Prague, Czech Republic, 2005, Paper Code: FR-A22-TO/4.
48. Dostál, P., Bobál, V., Gazdoš, F. Adaptive control of a nonlinear process by two feedback controllers. In: Proc. of the 13th Mediterranean Conference on Control and Automation, Limassol, Cyprus, 2005, 946-950.
49. Kubalčík, M., Bobál, V. Adaptive control of continuous two input – two output system. In: Proc. of the 7th Portuguese Conference on Automatic Control, Controlo 2006, Lisbon, Portugal, 2006, Ma – 6 – 1.
50. Kubalčík, M., Bobál, V. Adaptive control of three - tank- system: polynomial approach. In: Proc. of the IFAC International Symposium on Advanced Control of Chemical Processes, ADCHEM 2006, Gramado, Brazil, 2006, 367-372.
51. Chalupa, P., Bobál, V. Control of liquid tanks using decentralized approach with logical supervisor. In: Proc. of the IFAC International Symposium on Advanced Control of Chemical Processes, ADCHEM 2006, Gramado, Brazil, 2006, 379-384.
52. Kubalčík, M., Chalupa P., Bobál, V. Self tuning control applied to a coupled drives process. In: Proc. of the 6th Asian Control Conference 2006, Bali, Indonesia, 2006, 475-481.
53. Navrátil, P., Bobál, V., Dostál, P. Self-tuning control of three tank system. In: Proc. of the 6<sup>th</sup> Asian Control Conference, 2006, Bali, Indonesia, 1160 – 1165.
54. Vojtěšek, J., Dostál, P., Bobál, V. Tubular chemical reactor: from simulation to adaptive control. In: Proceeding of the 15<sup>th</sup> IASTED International Conference on Applied Simulation and Modelling (ASM 2006), 2006, Rhodes, Greece, 39-44.
55. Dostál, P., Gazdoš, F., Bobál, V. Adaptive control of a MIMO process by two feedback controllers. In: Proceeding of the 6<sup>th</sup> Asian Control Conference, Bali, Indonesia, 2006, 540-546.
56. Novák, J., Bobál, V., Vojtěšek, J. Nonlinear internal model control of CSTR. In: Proceeding of the Portuguese Conference on Automatic Control, Lisboa, Portugal, 2006.
57. Novák, J., Chalupa, P., Bobál, V. New laboratory course for control education. In: Proceeding of the 7<sup>th</sup> IFAC Symposium on Advances in Control Education. Madrid, Spain, 2006.
58. Bobál, V., Chalupa, P., Novák, J., Dostál, P. Adaptive control of nonlinear servo system: comparison of standard and dual Approaches. In: Proc. of the 26th IASTED International Conference on Modelling, Identification and Control, Innsbruck, Austria, 2007, 414-419.
59. Bobál, V., Chalupa, P., Dostál, P. Adaptive dual control of nonlinear liquid system. In: Proc. of the IFAC Workshop on Adaptation and Learning in Control and Signal Processing, Saint Petersburg, Russia, 2007.
60. Dostál, P., Gazdoš, F., Bobál, V.: Design of controllers for processes with time delay by polynomial method. In: Proc. of the European Control Conference ECC'2007, Kos, Greece, 2007, 4540-4545.
61. Dostál, P., Gazdoš, F., Bobál, V., Vojtěšek, J. Adaptive control of a continuous stirred tank reactor by two feedback controllers. In: Proc. of the 9th IFAC Workshop Adaptation and Learning in Control and Signal Processing ALCOSP'2007, Saint Petersburg, Russia, 2007, P5-1 – P5-6.
62. Navrátil, P., Bobál, V. Multiestimation scheme for adaptive control of three tank system. In: Proc. of the 9th IFAC Workshop Adaptation and Learning in Control and Signal Processing ALCOSP'07, Saint Petersburg, Russia, 2007.
63. Novák, J., Bobál, V., Chalupa, P. Control of pH-neutralization plant using model predictive control and local model network. In: Proceedings of the 26th IASTED International Conference on Modelling, Identification and Control, Innsbruck, Austria, February 12-14, 2007, Paper No. 550-085.
64. Kubalčík, M., Bobál, V. Self – tuning control of continuous – time two – input two –output System. In: Proc. of the IFAC Symposium on System, Structure and Control, SSSC 2007, Foz Iguacu, Brazil, 2007.

65. Kubalčík, M., Bobál, V., Maca, M. Environment for CAD and verification of self – tuning controllers. In: Proc. of the 9th IFAC Workshop Adaptation and Learning in Control and Signal Processing, ALCOSP 2007, Saint Petersburg, Russia, 2007.
66. Chalupa, P., Bobál, V., Novák, J. Self-tuning predictive control of nonlinear systems. In: Proceedings of the 26th IASTED International Conference on Modelling, Identification and Control, Innsbruck, Austria, February 12-14, 2007, Paper No. 550-085.
67. Chalupa, P., Bobál, V. Model of three-tank liquid system with air bubbles in pipes. In: Proceedings of the IASTED Asian Conference on Modelling and Simulation, Beijing, China, 2007, Paper No. 571-107.
68. Chalupa, P., Bobál, V. Modelling and predictive control of inverted pendulum. In: 22nd European Conference on Modelling and Simulation, Nicosia, Cyprus, 2008, 531-537.
69. Kubalčík, M., Bobál, V. Adaptive control of three - tank - system using polynomial methods. In: Proceedings of the 17th IFAC World Congress, Soul, 2008, 5762-5767.
70. Dostál, P., Bobál, V., Vojtěšek, J. Simulation of steady-state and dynamic behaviour of a tubular chemical reactor. In: Proceedings of the 22nd European Conference on Modelling and Simulation, Nicosia, Cyprus, 2008, 487-492.
71. Dostál, P., Bobál, V., Gazdoš, F. Application of the polynomial method in adaptive control of a MIMO process. In: Proceedings of the 16th Mediterranean Conference on Control and Automation, Ajaccio, Corsica, 2008, 131-136.
72. Kubalčík, M., Bobál, V. Adaptive control of three - tank - system: comparison of two methods. In: Proceedings of the 16th Mediterranean Conference on Control and Automation, Ajaccio, Corsica, 2008, 1041-1046.
73. Bobál, V., Chalupa, P., Dostál, P. Library for design and simulation verification of self-tuning controllers. In: Proceedings of the 22nd European Conference on Modelling and Simulation, Nicosia, Cyprus, 2008, 493-499.
74. Chalupa, P., Novák, J., Bobál, V. Usage of direct search methods in predictive control of ancillary services, In: Proceedings of the Second IASTED Africa Conference on Power & Energy Systems, Gabarone, Botswana, 2008, 212-217.
75. Novák, J., Bobál, V., Chalupa, P. Power balance control using evolutionary algorithm. In: Proceedings of the Second IASTED Africa Conference on Power & Energy Systems, Gaborone, Botswana, 2008, 207-211.
76. Bobál, V., Kubalčík, M., Chalupa, P., Dostál, P. Adaptive predictive control of nonlinear system with constraint of manipulated variable. In: Proceedings of the IASTED International Conference Modelling, Identification and Control, Innsbruck, Austria, 2009, 349-354.
77. Novák, J., Chalupa, P., Bobál, V. Control of ph-neutralization process using multiple models and predictive control. In: Proceedings of the IASTED International Conference Modelling, Identification and Control, Innsbruck, Austria, 2009, 325-330.
78. Kubalčík, M., Bobál, V. Adaptive predictive control applied to couple drives process. In: Proceedings of the IASTED International Conference Modelling, Identification and Control, Innsbruck, Austria, 2009, 331-336.
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**User-oriented software:**

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