

# Dan Ștefănoiu

## • Publications List – Extension •

(Research grants included)

- **Note:** Publications are in English, French, or Romanian, as indicated by the final labels (E), (F) and respectively (R).

## 6 Research and Technical Reports

1. Ștefănoiu Dan, Petrescu Cătălin, Dumitrașcu Alexandru, Culiță Janetta  
*Numerical Models and Fast Prediction Methods for Ecological Phenomena*, Research Report CNMP.UPB-P4.31050-2007.II/DS.CP.AD.JC-12.2008, National Center for Programs Management & "Politehnica" University of Bucharest (Dept. of Automatic Control & Computer Science), Romania, 210 pages, **December 2008** (R).
2. Ștefănoiu Dan, Petrescu Cătălin, Dumitrașcu Alexandru  
*Design, Construction and Implementation of a Mobile Unit for Signal Acquisition, Processing, Identification and Diagnosis*, Research Report AMCSIT.UPB-P5.117-2007.II/DS.CP.AD-10.2008, Managerial Agency for Technological Research and Innovation & "Politehnica" University of Bucharest (Dept. of Automatic Control & Computer Science), Romania, 160 pages, **October 2008** (R).
3. Petrescu Cătălin, Nicula Octavian, Ștefănoiu Dan  
*Designing VISA - A Versatile Interface of Signal Acquisition*, Research Report AMCSIT.UPB-P5.117-2007.I/CP.ON.DS-12.2007, Managerial Agency for Technological Research and Innovation & "Politehnica" University of Bucharest (Dept. of Automatic Control & Computer Science), Romania, 40 pages, **December 2007** (R).
4. Nitu Costică, Dumitrașcu Alexandru, Ștefănoiu Dan  
*Conceptual and Analytical Models of Ecological Systems*, Research Report CNMP.UPB-P4.31050-2007.I/CN.AD.DS-12.2007, National Center for Programs Management & "Politehnica" University of Bucharest (Dept. of Automatic Control & Computer Science), Romania, 90 pages, **December 2007** (R).
5. Ștefănoiu Dan, Ionescu Florin  
*Modeling and Prediction of Natural Phenomena by Using Adaptive Orthogonal Wavelet Packets*, Research Report HTWG.KN-AvH-STIO-09-07, Alexander von Humboldt Foundation & University of Applied Sciences in Konstanz, Germany, 360 pages, **September 2007** (E).
6. Ștefănoiu Dan, Ionescu Florin  
*Evolving HYPAS. Adding System Identification Modules.*, Research Report STZ-FHKN-StIo0310, Steinbeis Transfer Center & University of Applied Sciences (Dept. of Mechatronics), Konstanz, Germany, 25 pages, **October 2003** (E).
7. Ștefănoiu Dan, Ionescu Florin  
*Evolving HYPAS. Adding Frequency Analysis Modules.*, Research Report STZ-FHKN-StIo0309, Steinbeis Transfer Center & University of Applied Sciences (Dept. of Mechatronics), Konstanz, Germany, 60 pages, **September 2003** (E).
8. Ștefănoiu Dan, Ionescu Florin  
*Evolving HYPAS. New insights regarding the simulation philosophy.*, Research Report STZ-FHKN-StIo0308, Steinbeis Transfer Center & University of Applied Sciences (Dept. of Mechatronics), Konstanz, Germany, 20 pages, **August 2003** (E).
9. Ștefănoiu Dan, Ionescu Florin  
*Vibration Faults Diagnosis by Using Time-Frequency Dictionaries*, Research Report AvH-FHKN-StIo0302, Alexander von Humboldt Foundation & University of Applied Sciences (Dept. of Mechatronics), Konstanz, Germany, 150 pages, **February 2003** (E).

10. Ștefănoiu Dan, Ionescu Florin  
*Signal Compaction by Maximum Verisimilitude Frequency Averaging*, Research Report AvH-FHKN-StIo0301, Alexander von Humboldt Foundation & University of Applied Sciences (Dept. of Mechatronics), Konstanz, Germany, 40 pages, **January 2003** (E).
11. Ștefănoiu Dan, Ionescu Florin  
*Vibration Faults Classification by Fuzzy-Statistical Reasoning*, Research Report AvH-FHKN-StIo0205, Alexander von Humboldt Foundation & University of Applied Sciences (Dept. of Mechatronics), Konstanz, Germany, 100 pages, **May 2002** (E).
12. Ștefănoiu Dan, Tăbuș Ioan  
*Lossless Signal Compression via Adaptive Lifting*, Research Report TUT-TICSP-01-07-22, Technical University of Tampere, Tampere International Center for Signal Processing, Tampere, Finland, 50 pages, **July 2001** (E).
13. Ștefănoiu Dan, Norrie Douglas  
*Fuzzy Models for Multi-Agent Systems: Vagueness and Ambiguity Minimization.*, Technical Report UofC-MME No. 537, The University of Calgary, Dept. of Mechanical and Manufacturing Engineering, Calgary, Canada, 100 pages, **December 2000** (E).
14. Ștefănoiu Dan, Ulieru Mihaela, Norrie Douglas  
*Minimizing the Vagueness in Multi-Agent Systems.*, Research Report UofC-MME No. 331, The University of Calgary, Dept. of Mechanical and Manufacturing Engineering, Calgary, Canada, 75 pages, **December 1999** (E).
15. Ștefănoiu Dan, Tăbuș Ioan  
*Degenerating Eigenvalues – A Method to Design Adaptive Discrete-Time Wavelets*, Research Report TUT-TICSP-99-07-25, Technical University of Tampere, Tampere International Center for Signal Processing, Tampere, Finland, 110 pages, **July 1999** (E).
16. Ștefănoiu Dan, Kastantin Radwan, Feng Gang  
*Speech Processing by Discrete-Time Wavelet Transform -* Technical Report No. ICP-5/94, Institut de la Communication Parlée and Stendhal University (Institut National Polytechnique de Grenoble), Grenoble, France, 80 pages, **January 1994** (F).
17. Ștefănoiu Dan  
*Comparative Study of the Time-Frequency and Time-Scale Methods Applied to Real Speech Signals -* Research Report No. ICP-78/93 (Contract CIPA 351OCT921072 with EU), Institut de la Communication Parlée and Stendhal University (Institut National Polytechnique de Grenoble), Grenoble, France, 100 pages, **December 1993** (F).
18. Ștefănoiu Dan  
*Transforms Theory in Signal Processing -* Research Report No. UPB-FAC-150793, "Politehnica" University, Bucharest, Department of Automatic Control and Computer Science, Romania, 150 pages, **July 1993** (R).
19. Ștefănoiu Dan  
*On the Construction and the Properties of the Compactly Supported Wavelets -* Research Report No. ICP-34/92, Institut de la Communication Parlée and ENSERG (Institut National Polytechnique de Grenoble), Grenoble, France, 100 pages, **July 1992** (F).

## 7 Research Grants

- Each amount below is specified for the entire project in Euros (EUR).

### 7.1 As project manager

1. Title: *Ecological Monitoring System Based on Time-Frequency-Scale System Analysis*  
Support: National Center for Programs Management, Romania.  
Code: ECO-TSFS-31050/2007.  
Duration: 36 months, **October 2007 - September 2010**.  
Amount: 300,000 EUR.
2. Title: *Mobile Unit for Signal Acquisition, Processing, Identification and Diagnosis*  
Support: Managerial Agency of Technological Research and Innovation, Romania.  
Code: UMAPID-117/2007.  
Duration: 24 months, **September 2007 - September 2009**.  
Amount: 220,000 EUR.
3. Title: *Modeling and Prediction of Natural Phenomena by Using Adaptive Orthogonal Wavelet Packets*  
Support: Alexander von Humboldt Foundation, Germany.  
Code: V-8151/04053/2007.  
Duration: 3 months, **July 2007 - September 2007**.  
Amount: 10,000 EUR.
4. Title: *Enhancing the System Identification and Signal Processing Laboratory with a Mobile Identification, Processing and Diagnosis Unit*  
Support: Alexander von Humboldt Foundation, Germany.  
Code: V-8151/03247/2004.  
Duration: 12 months, **October 2004 - September 2005**.  
Amount: 10,000 EUR.
5. Title: *Fault Diagnosis and Prevention by Using Fuzzy Clustering and Time-Frequency Dictionaries*  
Support: Alexander von Humboldt Foundation, Germany.  
Code: IV-1070868-RUM/2001.  
Duration: 15 months, **October 2001 - December 2002**.  
Amount: 40,000 EUR.
6. Title: *Expert System for Identification of Stochastic Processes*  
Support: (Romanian) National Association for Technology and Scientific Research (ANSTI).  
Code: ANSTI-565/2000.  
Duration: 12 months, **October 2000 - October 2001**.  
Amount: 6,000 EUR.
7. Title: *Acquisition, Time-Frequency Compression and Data Transmission System*  
Support: Romanian Council for Academic Research (CNCSU).  
Code: 32/CNCSU: 565/22.10.98 & PUB: 10-9802, theme 147.  
Duration: 3 months, **October-December 1998**.  
Amount: 1,200 EUR.
8. Title: *Speech Coding Using Discrete-Time Orthogonal Wavelets*  
Support: French Region Rhône-Alpes, TEMPRA Program.  
Code: TEMPRA-INPG-DS/1994.  
Duration: 9 months, **October 1994 - June 1995**.  
Amount: 15,000 EUR.

9. Title: *Comparative Study on Time-Frequency and Time-Scale Methods Using Real Speech*  
 Support: European Union, COST Program.  
 Code: CIPA 351OCT921072.  
 Duration: 3 months, **October-December 1993**.  
 Amount: 10,000 EUR.

## 7.2 As scientific chief advisor

1. Title: *Ecological Gasification Technology with Clean Hydrogen Release*  
 Manager: Professor Octavian Stănașilă (ostanasila@hotmail.com)  
 Support: National Center for Programs Management, Romania.  
 Code: TECOGAHI-32100/2008.  
 Duration: 3 years, **October 2008 - September 2011**.  
 Amount: 500,000 EUR.
2. Title: *Autonomous Flight UAV Formation with Data Fusion and Distributed Communications*  
 Manager: Professor Adrian Mihail Stoica (stoica.am@gmail.com)  
 Support: National Center for Programs Management, Romania.  
 Code: FORMUAV-81001/2007.  
 Duration: 3 years, **October 2007 - September 2010**.  
 Amount: 600,000 EUR.
3. Title: *Evolving HYPAS (a Hydraulic and Pneumatic Computer Aided Design Environment) towards Windows XP Technology*  
 Manager: Professor Florin Ionescu (ionescu@htwg-konstanz.de)  
 Support: Steinbeis Transfer Center, Germany.  
 Code: HYPAS-2003.  
 Duration: 5 years, **2003 - 2008**.  
 Amount: 100,000 EUR.

## 7.3 As research team member

1. Title: *Aerial Autonomous System for Strategic Area Monitoring*  
 Manager: Associate-Professor Nicolae Constantinescu (vncaero@yahoo.com)  
 Support: National Center for Programs Management, Romania.  
 Code: SAMO-1437/2008.  
 Duration: 3 years, **October 2008 - September 2011**.  
 Amount: 600,000 EUR.
2. Title: *CANTI Research Platform*  
 Manager: Professor Dumitru Popescu (dpopescu@indinf.pub.ro)  
 Support: Romanian Ministry of Education and Research.  
 Code: CANTI-UPB-ACPC-2006.  
 Duration: 2 years, **October 2006 - September 2008**.  
 Amount: 500,000 EUR.
3. Title: *Integrated Advanced Control Systems for Efficient Exploiting of Thermal-Energetic Processes*  
 Manager: Professor Dumitru Popescu (dpopescu@indinf.pub.ro)  
 Support: RADET SA, Bucharest, Romania.  
 Code: CONTE-2006.  
 Duration: 3 years, **January 2006 – December 2008**.  
 Amount: 100,000 EUR.
4. Title: *Multi-static system for SSR assisted traffic within an airport zone*  
 Manager: Professor Dumitru Popescu (dpopescu@indinf.pub.ro)  
 Support: AEROFINA SA, Bacau, Romania.  
 Code: MDAS-2006.  
 Duration: 6 months, **July – December 2006**.  
 Amount: 16,000 EUR.

5. Title: *UAV aerial monitoring system aiming to focus on a specific geographical area*  
 Manager: Professor Dumitru Popescu (dpopescu@indinf.pub.ro)  
 Support: AEROFINA SA, Bacau, Romania.  
 Code: UAV-2006.  
 Duration: 1 year, **January – December 2006**.  
 Amount: 20,000 EUR.
6. Title: *Advanced numerical techniques in flow modeling. Software package.*  
 Manager: Lecturer Ciprian Lupu (cip@indinf.pub.ro)  
 Support: AEROFINA SA, Bacau, Romania.  
 Code: AEROCFD-2006.  
 Duration: 1 year, **January 2006 – December 2006**.  
 Amount: 20,000 EUR.
7. Title: *Energetic dispatcher for high energy consuming platforms*  
 Manager: Professor Dumitru Popescu (dpopescu@indinf.pub.ro)  
 Support: Electrica Muntenia Sud SA, Bucharest, Romania.  
 Code: ENERGO-2006.  
 Duration: 6 months, **January – June 2006**.  
 Amount: 14,000 EUR.
8. Title: *E-Learning and Cooperation*  
 Manager: Professor Dumitru Popescu (dpopescu@indinf.pub.ro)  
 Support: European Union through PAI-Brancusi Program.  
 Code: PAI-Brancusi Program.  
 Duration: 2 years, **September 2003 - August 2005**.  
 Amount: 30,000 EUR.
9. Title: *Endowing Industrial Robots with Artificial Vision. Study on a SCARA Robot.*  
 Managers: Professor Florin Ionescu (ionescu@htwg-konstanz.de)  
 Professor Theodor Borangiu (borangiu@cimr.pub.ro)  
 Support: DFG Germany, MERKATOR Program.  
 Code: MERKATOR-DFG-HTWG.KN-2002.  
 Duration: 1 year, **July 2002 - June 2003**.  
 Amount: 120,000 EUR.
10. Title: *Advanced Methods for Data Compression*  
 Manager: Professor Ioan TĂBUȘ (tabus@cs.tut.fi)  
 Support: Finnish Academy, COSAC Program.  
 Code: COSAC-TICSP-1998.  
 Duration: 5 years, **October 1998 - September 2003**.  
 Amount: 100,000 EUR.
11. Title: *Advanced Methods for Data Adaptive Filtering*  
 Manager: Professor Jaakko ASTOLA (astola@cs.tut.fi)  
 Support: Finnish Academy, ASAC Program.  
 Code: ASAC-TICSP-1998.  
 Duration: 12 months, **October 1998 - September 1999**.  
 Amount: 30,000 EUR.
12. Title: *Real-Time Applications for Distributed Information Systems*  
 Manager: Professor Dumitru POPESCU (dpopescu@indinf.pub.ro)  
 Support: Romanian Ministry of Education and Science.  
 Code: MEC-UPB-836-A90/1998.  
 Duration: 6 months, **July 1998 - December 1998**.  
 Amount: 2,000 EUR.

13. Title: *CAD Software for Control Systems*  
 Manager: Professor Dumitru POPESCU (dpopescu@indinf.pub.ro)  
 Support: Romanian Ministry of Education and Science.  
 Code: MEC-UPB-836-B5/1997.  
 Duration: 3 months, **October 1997 - December 1997**.  
 Amount: 1,000 EUR.
14. Title: *Neuro-Fuzzy Control Systems in Industry. Neuro-Identification and Fuzzy Command.*  
 Manager: Professor Dumitru POPESCU (dpopescu@indinf.pub.ro)  
 Support: Romanian Ministry of Education and Science.  
 Code: MEC-UPB-836-A83/1996.  
 Duration: 1 year, **March 1997 - February 1998**.  
 Amount: 3,000 EUR.
15. Title: *Computer Aided Design of Industrial Control Systems*  
 Manager: Professor Dumitru POPESCU (dpopescu@indinf.pub.ro)  
 Support: Romanian Ministry of Education and Science.  
 Code: MEC-UPB-836-A17/1996.  
 Duration: 1 year, **January-December 1997**.  
 Amount: 6,000 EUR.
16. Title: *Distributed Information Systems*  
 Manager: Professor Dumitru POPESCU (dpopescu@indinf.pub.ro)  
 Support: Romanian Ministry of Education and Science.  
 Code: MEC-UPB-836-B61/1996.  
 Duration: 1 year, **October 1996 - September 1997**.  
 Amount: 5,000 EUR.
17. Title: *Control Configurations for a Heat Providing Installation*  
 Manager: Professor Dumitru POPESCU (dpopescu@indinf.pub.ro)  
 Support: Romanian Ministry of Education and Science.  
 Code: MEC-UPB-836-A43/1996.  
 Duration: 2 years, **January 1996 - December 1997**.  
 Amount: 8,000 EUR.
18. Title: *Modern Methods for System Identification*  
 Manager: Professor Petre STOICA (ps@syscon.uu.se)  
 Support: Romanian Ministry of Education and Science.  
 Code: MEC-UPB-836-A27/1991.  
 Duration: 6 months, **October 1991 - March 1992**.  
 Amount: 2,000 EUR.

## 8 Lecture Notes and Course Textbooks for Students

1. Ștefănoiu Dan  
*Advanced Signal Processing. A Time-Frequency Approach. (Avancées dans le Traitement Numérique des Signaux. Approches temps-fréquence.)* - Printing House of "Politehnica" University, Bucharest, Romania, **June 1997** (F).
2. Dumitru Popescu, Ștefănoiu Dan, Sylviane Gentil  
*Process Control. A Numerical and Symbolic Approach. (Conduite des procédés. Approches numériques et symboliques.)* - Printing House of "Politehnica" University, Bucharest, Romania, **April 1997** (F).
3. Ștefănoiu Dan  
*Computing Techniques in Digital Signal Processing* - Printing House of "Politehnica" University, Bucharest, Romania, **September 1996** (R).
4. Ștefănoiu Dan  
*Introduction to Digital Signal Processing* - Printing House of "Politehnica" University, Bucharest, Romania, **September 1996** (R).

5. Ștefănoiu Dan

*Signal Processing with Wavelets & Applications to Speech Coding (Traitement du signal avec des ondelettes & Application au codage de la parole)* - Printing Center of ICP - ENSERG - Stendhal University of Grenoble, France, **March 1995** (F).

6. Ștefănoiu Dan, Stoica Petre

*System Identification and Identifiability* - Volume of Summer School "Automatique avancée en Génie des (bio)procédés" organized by the Research Centre for Computer Aided Methods in Automatic Control of Processes (affiliated to the Faculty of Automatic Control and Computer Science ("P"UB)) and by the Laboratoire d'Automatique de Grenoble (ENSIEG – INPG); Bucharest, Romania, **May 30 – June 4, 1994** (F).

## 9 Applications Guides for Students

1. Ștefănoiu Dan

*Experimental System Identification – Home Works and Seminar Exercices* - Printing House of "Politehnica" University, Bucharest, Romania, **November 1996** (R).

2. Ștefănoiu Dan

*Experimental System Identification – Time Series* - Printing House of "Politehnica" University, Bucharest, Romania, **October 1996** (R).

3. Ștefănoiu Dan

*MATLAB – Learning guide for students* - Printing House of "Politehnica" University, Bucharest, Romania, **May 1994** (R).

## 10 Powerpoint presentations (lecture notes, laboratory themes, tutorials, etc.)

• **Note.** Presentations made at scientific conferences are not enumerated here.

1. Ștefănoiu Dan, Stănișilă Octavian

*Mathematics and Signal Processing. Wavelets.* - Laboratory themes, **Spring 2006** (R).  
[www.geocities.com/aplimathes/SISP](http://www.geocities.com/aplimathes/SISP)

2. Ștefănoiu Dan

*System Identification* - Lecture notes, **Autumn 2005** (R).  
[www.geocities.com/aplimathes/SISP](http://www.geocities.com/aplimathes/SISP)

3. Ștefănoiu Dan

*(Digital) Signal Processing* - Lecture notes, **Spring 2005** (R).  
[www.geocities.com/aplimathes/SISP](http://www.geocities.com/aplimathes/SISP)

4. Ștefănoiu Dan

*(Digital) Signal Processing* - Laboratory themes, **Spring 2005** (R).  
[www.geocities.com/aplimathes/SISP](http://www.geocities.com/aplimathes/SISP)

5. Ștefănoiu Dan

*System Identification* - Laboratory themes, **Autumn 2004** (R).  
[www.geocities.com/aplimathes/SISP](http://www.geocities.com/aplimathes/SISP)

6. Ștefănoiu Dan

*Interdisciplinary Approaches Targeting Complex Models in Engineering* - Scientific seminary presentation, **Autumn 2004** (E).

7. Ștefănoiu Dan, Popescu Dumitru

"Politehnica" University of Bucharest and Dept. of Automatic Control & Computer Science - Past, Present and Future - Informal presentation, **Spring 2004** (F).

8. Ștefănoiu Dan  
*On the Integration of "System Identification" Curriculum into the Virtual University Project* - Scientific seminary presentation, **Spring 2004** (F).
9. Ștefănoiu Dan  
*Robotics - An Overview* - Lecture notes, **Autumn 2003** (E).
10. Ștefănoiu Dan  
*A Time-Frequency-Scale Approach to Fractal Data Denoising and Compression* - Scientific seminary presentation, **Spring 2003** (E).
11. Ștefănoiu Dan  
*An Introduction to MATLAB & SIMULINK* - Lecture notes, **Autumn 2002** (E).
12. Ștefănoiu Dan  
*Bearings Fault Classifications by Using Fuzzy Entropy* - Scientific seminary presentation, **Autumn 2002** (E).
13. Ionescu Florin, Ștefănoiu Dan, Constantin George  
*Parallel Robots - An Overview* - Scientific seminary presentation, **Spring 2002** (E).
14. Ștefănoiu Dan  
*Vibrations Faults Diagnosis by Fuzzy Clustering and Time-Frequency Dictionaries* - Scientific seminary presentation, **Spring 2002** (E).
15. Ștefănoiu Dan, Ionescu Florin  
*Half Century of Telecommunications and Signal Processing* - Lecture notes, **Winter 2001** (E).
16. Ștefănoiu Dan, Tăbuș Ioan  
*Speech Coding Gain Maximization by Eigenvalues Degenerating* - Scientific seminary presentation, **Spring 2001** (E).
17. Ștefănoiu Dan, Ulieru Mihaela  
*Fuzzy Models for Multi-Agent Systems* - Scientific seminary presentation, **Winter 2000** (E).

## 11 Papers in Progress, Preprints

1. Ștefănoiu Dan, Stănășilă Octavian, Popescu Dumitru  
*Wavelets - Theory and Applications* - Monograph, to be published by Romanian Academy, **2008** (R).
2. Ștefănoiu Dan, Loredana Lupu  
*Basic Concepts of Evolutionary Computing. Genetic Algorithms.* - student textbook, to appear in **2007-2008** (R).
3. Ștefănoiu Dan, Florea Gabriel  
*Basic Concepts of Fuzzy Sets, Measures and Control Systems.* - student textbook, to appear in **2007-2008** (R).
4. Ștefănoiu Dan, Popescu Dumitru  
*Fuzzy Modeling of Multi-Agent Systems by Ambiguity Minimization* - submitted to IEEE Transactions on Fuzzy Systems, on **January, 2006** (E).

5. Ștefănoiu Dan, Tăbuș Ioan  
*New Classifiers for Sampled Data* - preprint, **2003** (E).
6. Ștefănoiu Dan  
*Non Uniform Sampling and Related Fourier Transforms* - preprint, **1999** (E).
7. Ștefănoiu Dan, Stoica Petre  
*Advanced System Identification and Signal Processing (Avancées dans l'Identification des Systèmes et Traitement du Signal)* - Lecture notes **1998** (F).