

# INDUSTRIAL ELECTRONICS

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## EDITOR'S MESSAGE

*Aleksander Malinowski*  
*Newsletter Editor*

Dear IES Members and Colleagues,

In June 2000 I wrote a column from the Webmaster to the newsletter about the trend to move towards electronic distribution of information. Dr. Dan Wilamowski started publishing our newsletter on the Web in 1996, when he became an associate editor. At that time, it was the best way to cut the delay caused by slow distribution of the printed issue. However, members still needed to check if any new information was posted. The next step was to create a mailing list for members. Dr. Mo-Yuen Chow and I started such mailing list in June 2000. Despite some periods of inactivity the list served well as the distribution channel for the newsletter excerpts. Dr. Chow used it also a few times as a Vice President for membership.

The next milestone step was happened in December 2001. IES officers decided that since we already have the electronic distribution channels tested and working well we should move to the only electronic distribution of the newsletter. I accepted the challenge to do that transition. Starting from this issue of the newsletter, we no longer use the IEEE Printing House services to typeset, print, and distribute our publication. Yet, we would like to retain the printable format with page numbers. We will do it using Adobe's Portable Document Format technology. The newsletter is currently undergoing the redesign process both in its printing and Web version. Probably you will see slightly different designs for the next few issues. The publication time is cut to less than one month delay. My predecessor, Dr. Carlos Couto coined the new contents for the newsletter by adding several new departments. Now it is time to redesign its feel and look, and cut down the publication delay.

If you have any suggestions or comments, please contact me at [olekmali@ieee.org](mailto:olekmali@ieee.org)

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### Information for Authors

Announcements and letters to the editor are solicited from the membership. Please submit materials for consideration by the editor according to the schedule:

<b>Due Date</b>	<b>Issue</b>
January 31	March
April 30	June
July 31	September
October 31	December

### Contributions Welcome

Material for Feature Articles, Opinions, Chapter News, Professional Activities, and Abstracts of Reports should be mailed directly to the editor by the deadlines listed above.



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<http://www.ewh.ieee.org/soc/ies/>

### IES Publications

<http://www.ewh.ieee.org/soc/ies/publications.html>

### IES Newsletter

<http://sant.bradley.edu/ienews/>

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# NOMINATIONS AND AWARDS

## ***Call for Nominations***

### **Anthony J. Hornfeck Service Award, The IEEE Industrial Electronics Society**

The IEEE Industrial Electronics Society announces the call for nominations on Anthony J. Hornfeck Service Award. The Award was created in 1979 under the name: Meritorious Award. It is awarded to persons with recognized, outstanding and meritorious services to the IEEE Industrial Electronics Society. The recipient will be given a certificate with \$1,000 check. It is presented during the IES annual conference, IECON. The recipient has to be an IES member under 41 years of age at the time of selection; age limit can be waived in specific cases by majority vote of AdCom. You are invited to nominate a qualified person for the award.

We strongly request you to include the following items in the supporting material:

- Nominator: name; IEEE Membership Number (optional); affiliation; address; e-mail address;
- Candidate: name ; IEEE Membership Number; birthday; affiliation; address; e-mail address; supporting CV
- Recommendation: why the candidate is qualified for the award

The deadline for the nomination is July 31, 2002.

Please send the material to The IES Awards and Honor Committee: Hiromasa Haneda, [h.haneda@ieee.org](mailto:h.haneda@ieee.org)

## ***Call for Nominations***

### **Dr.-Ing. Eugene Mittelmann Achievement Award, The IEEE Industrial Electronics Society**

The IEEE Industrial Electronics Society announces the call for nominations on Dr.-Ing. Eugene Mittelmann Achievement Award. The award was established in 1975 by The IEEE Industrial Electronics Society (IES). It is awarded to persons who have made outstanding contributions to the field of Industrial Electronics. It may be given for a single major accomplishment or for a career of recognized achievements. The recipient will be awarded a certificate with \$3,000 check during the society's annual conference, IECON. He/she must be a member of The IES. You are invited to nominate a qualified person for the award.

We strongly request you to include the following items in the supporting material:

- Nominator: name; IEEE Membership Number (optional); affiliation; address; e-mail address;
- Candidate: name ; IEEE Membership Number; birthday; affiliation; address; e-mail address; supporting CV
- Recommendation: why the candidate is qualified for the award

The deadline for the nomination is July 31, 2002.

Please send the material to The IES Awards and Honor Committee: Hiromasa Haneda, [h.haneda@ieee.org](mailto:h.haneda@ieee.org)

## ***Call for Nominations***

The IES Nominations Committee is seeking candidates who are interested in serving the society as an Officer and/or Administrative Committee member in 2003 and beyond. Candidates for the following officer position are needed:

- President Elect
- Vice President for Membership Activities
- Vice President for Technical Activities
- Vice President for Conference Activities
- Vice President for Workshop Activities
- Vice President for Publications
- Vice President for Planning and Development
- Secretary
- Treasurer
- Transactions Editor
- Newsletter Editor

Seven candidates for a three-year term of service on the Administrative Committee are also sought. Nominations should be accompanied by a 2-page biography of the nominee if possible. Use the following outline for the biographical information: Name and Affiliation of Nominee, Education, Employment History, Summary of Service to IES, Summary of Service to IEEE, Evidence of Professional Status (publications, patents, awards, etc.).

Please submit nominations to the Chairman of the IES Nominations Committee: H. Troy Nagle at [t.nagle@ieee.org](mailto:t.nagle@ieee.org)

## AROUND THE WORLD

### *Welcome Neural Network Society, Good Bye Neural Network Council*



Neural Network Council Banner served the council since its inception in 1993.  
It received a sentimental faraway from the officers.



The new banner was introduced during the annual administrative committee meeting in 2002.

We were there. We saw it when the Neural Network Council (NNC) transformed into Neural Network Society (NNS). We voted in the first office election held by the new society. We saw it born. It was a historical moment.

It was the first Adcom meeting of the society, held in Hilton Hawaiian Village Hotel in Honolulu, Hawaii on Sunday, May 12, 2002. Prof. Okyay Kaynak and Dr. Aleksander Malinowski, two representatives from Industrial Electronics Society that is one of the parent societies witnessed this historical moment and voted in the elections.

IES is one of the nine parent societies. We will continue to be a part of NNS administrative committee for the next three years. Then they are on their own. Next year we will send only one representative with voting privileges. During the last two years, we will send our representative only once. The same rule applies to other parent societies.

Prof. Bogdan 'Dan' Wilamowski, our President Elect was re-elected and will continue to be the Vice President for Finances for NNS. This year we also voted for the new president elect - Prof. Jacek Zurada was elected, for the Vice President of Member Activities – Prof. Vincenzo Piuri was elected, for the Vice President of Publications – David B. Fogel was elected. The elections were very interesting as multiple candidates competed for the positions.

Let us congratulate Dan Wilamowski on winning the election for the Vice President for Finances and wish the best of luck for the new Society.

Aleksander Malinowski,  
IES Representative to NNC for 2002

## AROUND THE WORLD

### ***Invitation to attend IECON 2002 in Sevilla, Spain***

Leopoldo García Franquelo, IECON'02 General Chair

We are honored and excited to be inviting you to the 28<sup>th</sup> annual conference of the IEEE Industrial Electronics Society which will be held in Sevilla, Spain from November 5 to 8, 2002. The conference is also co-sponsored technically by the Society of Instrument and Control Engineers of Japan (SICE) and the Universidad de Sevilla. This year, IECON will be hosted at the Los Lebreros Hotel. The hotel has first class accommodations and is situated in the middle of one of the most historic cities of southern Spain. Sevilla is a city known for its warmth, food, and embracing people. Rest assured your stay will be an enriching experience.

The IECON 2002 is organizing an original blend of modern technology and old-fashioned fun. The purpose of the conference is to bring together researchers and practitioners from industry and academia to present and discuss their recent developments in industrial electronics. We are working on an exciting technical program, including regular presentations, special sessions, tutorials, and keynote speeches, all of them organized into four main topics (tracks):

- Computer and Control Systems,
- Power Electronics,
- Sensors and Actuators, and
- Industrial Information Technology.

IECON is the flagship conference of the Industrial Electronics Society. This Society is the most global of those belonging to IEEE. This makes the conference an excellent opportunity to have unique multi-cultural experiences, re-new old acquaintances and make new friends from all over the world. All of this will take place in a city where every corner has a story to tell.

For further information, please visit our web page at <http://iecon02.us.es>. This page is regularly updated and is the natural interface between participants and conference organization committee.



### ***Invitation to attend ISIE 2002 in L'Aquila, Italy***

James C. Hung, Carlo Cecati, General Co-Chairmen

On behalf of the Steering Committee, it is our great pleasure to extend our cordial invitation to you for attending ISIE'2002, the International Symposium on Industrial Electronics. The goal of this conference is to provide a forum for exploring the many facets and ramifications associated with modern industrial electronics. The professional interaction, afforded by this conference, will permit individuals with common interests the opportunity to share ideas and strategies. We believe that this conference will also foster a spirit of cooperation that leads to the establishment of new friendships for addressing some of the on-going problems in this vibrant area of technology. ISIE is sponsored by the Industrial Electronics Society (IES) of IEEE, in technical co-sponsorship with the Society of Instruments and Control Engineers of Japan (SICE) and the University of L'Aquila (Italy).

This year, ISIE will be held in Convento della Basilica di Collemaggio, L'Aquila, Italy, from July 8 to 11, 2002. The Conference is organized around six tracks, (1) Emerging Technologies, (2) Factory Automation, (3) Industrial Control, Instrumentation and Signal Processing, (4) Intelligent Systems, (5) Mechatronics and (6) Power Electronics. The Technical Program includes about 250 papers covering various aspects of analysis, design, implementation, and testing of electronic systems for industrial applications.

The Conference includes several events. They are an Opening Ceremony, a Plenary Session, three Invited

Speeches, Regular and Special Sessions, and Tutorials. In addition, a Welcome Party, daily lunches and a Banquet are arranged for fellowship. Local tours are available in the daytime for family members. Post-conference tours are also available for visiting some of the most famous Italian cities. Conference information is detailed on the following pages. For additional information on registration, local arrangements, and the family program please check the Conference Web site: <http://isie2002.univaq.it/>. We appreciate your interest and response to this invitation and look forward to seeing you at ISIE 2002 in L'Aquila.



# NEW TECHNOLOGY

## *Portable Document Format – How to create a file? How portable it really is?*

Aleksander Malinowski  
Bradley University, USA

Adobe's Portable Document Format (PDF) has been around for several years now. Most of us used files with PDF extensions from time to time. PDF is the format of choice for the documentation in the electronic format distributed both on-line and on CD-ROMs. Lengthy manuals, catalog part descriptions, journal and conference papers, various forms can now be viewed and/or printed at on demand at any time and the result is supposed to look identical regardless of the computer, operating system or printer. (The last is limited by the fact whether the printing quality is good enough.)

Adobe <http://www.adobe.com/> - one of the leaders of the desktop publishing software owes the patent to PDF format. Their business idea is simple and powerful – make PDF a standard, provide the document reader for free and charge for PDF creation and manipulation software. Acrobat Reader (current version is 5.0) can be downloaded for almost any operating system free of charge from <http://www.adobe.com/products/acrobat/readstep.html>

If one needs to create their own PDF documents the minimum software is Adobe Acrobat - \$250.00 for commercial use or about \$60 for educational use. Creating documents is convenient – the software installs two “printers” one called PDF Writer, and the other called Distiller. PDF Writer is ready to be used immediately, no configuration is required. The price for the simplicity is very limited possibility of tweaking its options. By default, the created files may actually look slightly different on different computers and graphics may be good enough to be viewed on screen but not for printing. The printed images might look fuzzy.

The remedy to problems described above is use of Distiller. Distiller comes with four default settings: Screen, Print, Press and eBook. After the installation, eBook is used by default. The Screen option is similar to PDF Writer, the Print option allows to create a file that will be printed well in most cases on the high quality printer (laser or color). Press option suppresses most of image compression and forces the font information for all used fonts to be included with the PDF file. Better printing quality and uniformity has the price tag of larger file size. eBook offers another Distiller printer settings that are optimized for document display using electronic books and handheld computers. In addition, users can modify those default settings and save under their own names. A good article by R. Sprague that discusses the Distiller settings and instructs how to change them can be found on PDFZone Web site at <http://www.pdfzone.com/rich/distillersettings1.html>.

It was mentioned earlier that both Print and Press settings forces so called font embedding into PDF document. This feature allows nonrestrictive use of non-standard and non-English fonts. If those fonts are used in the original document and not embedded then they must be also installed on the end user's computer, or the document may not be displayed correctly. In case a document uses a font that is neither embedded nor present on the end user's system then a font substitution is performed. In many cases, the result would be good enough. However, in case of some applications, for example artistic design presentation, that may not be acceptable.

In case if the original document uses a non-standard (non-Western European) character coding and the font is not embedded, and the end user's computer does not have the same font encoding installed then the document will not be displayed or printed. For example all documents that were prepared either in China or Korea must have all fonts embedded even if they use only Latin (Western) characters because those characters are provided by non-Western font. A good article that discusses this problem can be found on PDFZone Web site at <http://www.pdfzone.com/rich/index.html>.

Everything so far indicates that if the document author follows the guidelines for the correct PDF file creation then the PDF file is truly portable. However, if some recommendations are not used then the PDF file may be unreadable for an average end user. This would be true if every desktop publishing software vendor would allow embedding of their proprietary fonts. Unfortunately some of them impose certain restrictions. For example fonts that came with Corel software may not end up as embedded into the PDF. (For example: how would you like the target user not to be able to see any mathematical equations or just a few symbols used in them in a document?) This serious problem is described and explained by an article located at <http://www.pdfzone.com/rich/fonts1.html>.

This article discussed use of basic Adobe's tools to create PDF documents and outlined some of the most serious problems that may occur in case of using incorrect settings while creating them. However, there are several other non-Adobe tools. Some of them are sold as regular software or shareware by Internet shops like <http://www.epublishstore.com/>.

However, there are free tools available as well. Ghostscript (<http://www.cs.wisc.edu/~ghost/>) is probably the most popular one. It is capable of both producing and viewing

PDF documents. The software can be downloaded precompiled for a particular operating system or in source code under the GNU public license. An extensive font collection that also provides means to view non-Western fonts is also available at the same location.

Another problem is conversion of PDF documents into Postscript (PS) ones. Adobe allows such conversion by printing a document to a file to a Postscript printer. Another interesting free conversion tool is called XPDF and can be downloaded from <http://www.foolabs.com/xpdf/>. XPDF works with Ghostscript and font libraries that come with it.

TEX is an IEEE standard for publications. TEX users can download a free virtual PDF printer driver for this software from <http://www.tex.ac.uk/tex-archive/dviware/dvipdfm/>.

Although PDF is a copyrighted format, there are some free libraries available for programmers as well. C programmers will find ClibPDF a very useful ANSI C library.

(Available for download from <http://www.stat.ucla.edu/~deleeuw/work/courses/240/ansi/ClibPDF/>.)

There is a great number of free and commercial software packages and libraries that allow creating and viewing PDF documents. This article is focused not on the step by step instruction how to use a particular tool but rather with general explanation of possible problems and advice how to prevent them. More attention is given to Adobe's Acrobat software as it is the most popular software from the creator of the standard.

Dr. Aleksander Malinowski serves as the Information Technology chair for IECON'01 and IECON'02, responsible for development and supervising of the electronic paper submission and review process for IECON conferences.

## SOCIETY NEWS

### *Next AdCom and Officer Meetings*

New officers were elected during December 2001 AdCom that was held during IECON'01 in Denver, Colorado. The new roster is published on the next page of this newsletter. The newly elected officers met during the AdCom meeting that was held at the Embassy Suites Hotel in Piscataway, New Jersey on Saturday, March 9, 2002 and Sunday, March 10, 2002.

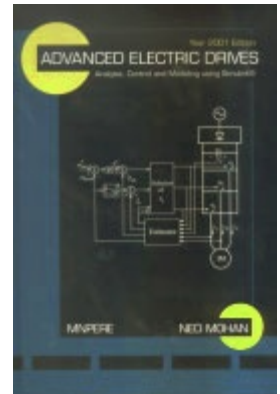
The next AdCom meeting will be held in conjunction with IECON 2002 in Sevilla, Spain. The date is still to be determined. An officers' meeting will be held in conjunction with ISIE'02 in L'Aquila, Italy in July.

## BOOK REVIEW



### *Advanced Electric Drives Analysis, Control and Modeling using Simulink*

By Ned Mohan, MNPERE, Minneapolis, 2001  
Hardcover, 171 pages, ISBN 0-9715292-0-5



This is a second textbook - authored by Professor Ned Mohan from the University of Minnesota - which supplements the first book entitled: Electric Drives - An Integrative Approach published in 2000 by MNPERE, Minneapolis, USA. (See book review: IEEE - Industrial Electronics Society Newsletter, Vol. 47, No. 3, 2000, pp. 11-12, as well as EPE-Journal, Vol. 4, No. 2, June 1994, pp.10). These two textbooks together are designed to teach electric machines and drives from basics to advanced concepts in two courses.

This book has 10 chapters altogether covering the topics:

- an introduction to advanced electric drive systems,
- induction machine equations (in phase quantities assisted by space vectors)
- dynamic analysis of induction machines in terms of dq-windings
- vector control of induction motor drives (a qualitative examination)
- mathematical description of vector control
- detuning effects in induction motor vector control
- space vector pulse-width-modulated (SV-PWM) inverters

- direct torque control (DTC) and encoder-less operation of induction motor drives
- vector control of permanent-magnet synchronous motor (PMSM) drives
- and switched-reluctance motor (SRM) drives

The author uses the same notations and provides the same extremely easy-to-follow explanation of analysis and control of ac machine dynamics as in the first book dealing with the steady state. Vector control of induction motor is introduced in an original way based on analogy to a current-excited transformer with a shorted secondary winding (Chapter 4). The dq-analysis is based on a set of orthogonal windings, rather than as a purely mathematical transformation. However, certain items are not discussed such as the stator flux oriented vector control and the so called two-phase or

discontinuous-PWM which reduces switching losses for higher modulation index.

Each chapter is supplemented with good selected simulation examples (a CD-ROM attached to the book includes Simulink files for these examples), summary, homework problems and selected references at the end.

Like the previous book, I strongly recommend this textbook to engineering educators and students of electrical and mechanical departments.

See also <http://www.MNPERE.com/>

Marian P. Kazmierkowski  
Warsaw University of Technology, Poland

## Applied Electronics Conference 2002

The international conference “Applied Electronics” is a regular event, organised annually by the University of West Bohemia, Czech Republic. It serves as a forum for researchers and practitioners interested in advances in a wide scope of electronic circuits and systems.

**Date:** 11 to 12 September 2002  
**Venue:** University of West Bohemia, Pilsen, Czech Republic

### Preliminary topics:

- Methods and tools for designing complex electronic systems
- Signal processing
- Electronics in measurement
- Electronics in industry and transport
- Electronics in telecommunication
- Electronic control systems, HW and SW
- Electronics manufacturing technology
- Electronics in medicine
- Teaching of electronics at the universities

Prospective authors are invited to submit the 4-page papers in English at <http://www.fel.zcu.cz/konfae/>. All papers will be reviewed. The accepted papers will be published in the conference Proceedings. For instructions for authors and further details, please refer to the conference web page.

### Important dates:

Deadline for paper submission:	April 30, 2002
Notification of paper acceptance by:	June 3, 2002
Registration deadline (conference fee 1000 Kč or 35 EUR):	June 30, 2002

### Contact information:

conference Web page: <http://www.fel.zcu.cz/konfae/>  
e-mail: [konfae@kae.zcu.cz](mailto:konfae@kae.zcu.cz)  
tel/fax: +420 19 7223315  
address: University of West Bohemia  
Department of Applied Electronics  
Univerzitni 22  
306 14 Pilsen  
Czech Republic

The Organizing Committee is looking forward to your participation.

Jiri PINKER  
Chairman Organizing Committee  
University of West Bohemia

# CHAPTER NEWS

## **IEEE - Yugoslavia Section Joint Chapter Industrial Electronics, Industry Applications and Power Electronics Society**

Prof. Dr. Vladimir Katic  
Interim Chapter Chair, IEEE Senior Member  
University of Novi Sad, Novi Sad, Yugoslavia  
E-mail: [katav@uns.ns.ac.yu](mailto:katav@uns.ns.ac.yu)

The IEEE Joint Chapter IES/IAS/PELS has been working since the end of March 2001. We would like to inform IES membership of our work through IES Newsletter about numerous activities that have been performed. The major event was the 11th International Symposium on Power Electronics in ct.31/Nov.2, 2001. For next period, two International Symposiums and one Workshop are planned.

The members of our Chapter (59, among them there are 19 Students Members) would like to take more active role in IES activities, especially in R8. Until now we have worked with very low budget (we have relayed on the YU Section support). However, now we would like to start more aggressive to attract more members especially from industry and students. Besides educational activities (which are going pretty good), we would like to start social and have more professional and technical meetings.

No.	Datum/Date	Vrsta/Type	Naslov / Title	Predavač i firma / Lecturer & Organization
1.	26.12.2000	Lecture	Vector Modulation and Multilevel Converter Control	Dr. Nikola Čelanović, Ph.D.E.E. ABB Corporate Research Ltd., Baden-Dattwil, SWITZERLAND
2.	23. 01. 2001	Lecture	New Trends in Power Quality Conditioning	Mr. Dušan Graovac, M.Sc.E.E., A. Member of IEEE University of Novi Sad, Faculty of Technical Sciences, Novi Sad, YUGOSLAVIA
3.	30. 03. 2001	Inauguration	Inauguration of the IEEE Joint Chapter PELS/IAS/IES	Prof. Dr. Vladimir Katić, Interim Chapter Chair University of Novi Sad Faculty of Technical Sciences, Novi Sad, YUGOSLAVIA
4.	22. 05. 2001	Lecture	Electrical and Computer Engineering in Medical Instrumentation	Dr. Mark Manwaring, Ph.D.E.E. Brigham Young University, Provo, Utah, USA
5.	01. 06. 2001	Lecture	Charge-pump Power Converters	Mr. Josif Kosev, M.Sc.E.E., IEEE Member University "Ss Cyril & Mehtodius", Faculty of Electrical Engineering, Skopje, Rep. MACEDONIA
6.	29. 10. 2001	Lecture	Modern Algorithms for AC Drives Control	Dr. Nikola Čelanović, Ph.D.E.E. ABB Corporate Research Ltd.,Baden-Dattwil, SWITZERLAND
7.	30. 10. 2001	Lecture	Induction, Permanent magnet or Synchronous Reluctance Motor ? How to Select the Best Motor For the Application	Dr. Vojislav Stefanović, Ph.D.E.E. Consultant, V-S Drives, Afton, Virginia, USA
8.	31.10. – 2.11.2001	Conference	11 <sup>th</sup> International Symposium on Power Electronics	Prof. Dr. Vladimir Katić, Symposium Co-Chair Prof. Dr. Vladan Vučković, Symposium Co-Chair
9.	01. 11. 2001	Technical	IEEE Membership in 2002 & IEEE Student Branch in Novi Sad	Prof. Dr. Djordje Paunović, IEEE Senior Member, IEEE YU Section Chair University of Belgrade, Faculty of Electrical Engineering, Belgrade, YUGOSLAVIA
10.	22. 11. 2001	Lecture	Modern techniques for single phase AC/DC converters input current shaping	Dr. Milan M. Jovanović, Ph.D.E.E. , IEEE Fellow Vice-president for Research & Development, DELTA Product Corp., Research Triangle Park, North Carolina, USA
11.	04. 12. 2001	Lecture	Characterization of Internet traffic & impact on network performance	Prof. Dr. Ljiljana Trajković, IEEE Senior Member Simon Fraser University, Vancouver, CANADA
12.	17. 12. 2001	Lecture	Effects of heavy doping in semiconductors	Prof. Dr. Stojan Ristić, IEEE Senior Member University of Niš, Faculty of Electronics, Niš, YUGOSLAVIA
13.	21. 03. 2002	Lecture	DSP everywhere – New sub-micron technology	Prof. Dr. Miodrag Temerinac, IEEE Senior Member Micronas GmbH, Freiburg, GERMANY
14.	28. 03. 2002	Lecture	Mains perturbation – Introduction, Measurement & Instrumentation	Martin Langer, Dipl. Ing. TEAM GmbH, Herten, GERMANY
15.	23.04.2002	Lecture	Power Quality – Research results in Rep. Of Macedonia	Prof. Dr. Ljubomir Nikoloski, IEEE Senior Member, IEEE Macedonia Section Chair University "Ss Cyril & Mehtodius", Faculty of Electrical Engineering, Skopje, Rep. MACEDONIA
16.	09.05.2002	Lecture	Computer Design & VLSI Technologies	Prof. Dr. Vojin Oklobdzija, Fellow IEEE  Electrical & Computer Eng. Department University of California, Davis, California, USA

# 2003 INTERNATIONAL ELECTRIC MACHINES AND DRIVES CONFERENCE

Monona Terrace Convention Center  
Madison, Wisconsin  
June 1-4, 2003

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## Announcement and Call for Papers

# IEMDC'03

The IEEE International Electric Machines and Drives Conference provides an international forum for sharing of experience, new ideas, and developments in design, analysis, new materials utilization and optimization techniques for electrical machines, machine drive systems and drive components. The scope includes all varieties and sizes of electric machinery. Also included are practical applications, operations, maintenance, and the development and harmonization of standards for machines and drive systems. The IEMDC is a gathering for users, designers, and analysts of electric machines and drives, and related power electronics and controls.

In addition to papers of general applicability, IEMDC '03 will feature special sessions on four technical tracks:

- Automotive Applications of Electric Drives and Controls
- Aerospace Applications of Electric Drives and Controls
- Large Turbogenerator Maintenance and Life Expectancy
- Office Automation Applications of Electric Drives

These tracks will provide a separate focus on the technical subjects of this conference, as used and/or proposed for use in the target industry. Papers for each respective track will be reviewed by an industry-specific panel, and special sessions at the conference will be devoted to these papers.

### Author Deadlines

Submission of Abstracts and Digests	October 21, 2002
Notification of Acceptance	January 31, 2003
Submission of Final Papers	March 31, 2003

To be considered for the conference program, authors should submit:

1. A one page abstract of 150 words or less with fully headed paper title, names of all authors, area of interest, and name and addresses of the corresponding author, including phone, fax, and e-mail address. All communication with the corresponding author will be conducted via e-mail and the conference web site. Papers will be presented in either lecture or poster format. If you have a preference for either format for presentation of your paper, please indicate that on this page. The final decision on presentation method however will be up to the program committee.
2. A digest of **up to five pages** on standard letter/A4 paper size, including key equations, figures, tables, and references headed by paper title only. The digest must state the purpose of the work, manner in which it advances previous work, and goals achieved and their significance in sufficient detail for undergoing a review process. The digest should not include the names and addresses of the authors.

Digests and abstracts will be submitted electronically in Adobe Acrobat Portable Document Format (.pdf). To facilitate the review process, please submit the abstract and digest as separate files. Instructions to submit abstracts and digests will be posted on the web site by July 30, 2002.

### Conference Chair

Professor Thomas A. Lipo  
University of Wisconsin  
1415 Engineering Dr.  
Madison, WI 53706  
[lipo@engr.wisc.edu](mailto:lipo@engr.wisc.edu)

### Program Co-Chair

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1513 Engineering Dr.  
Madison, WI 53706  
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Conference Web Site: <http://www.iemdc03.org/>

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## IEEE Transactions on Mobile Computing

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**Support Services** — mobility and roaming, nomadic computing, multimedia, operating system support, power management

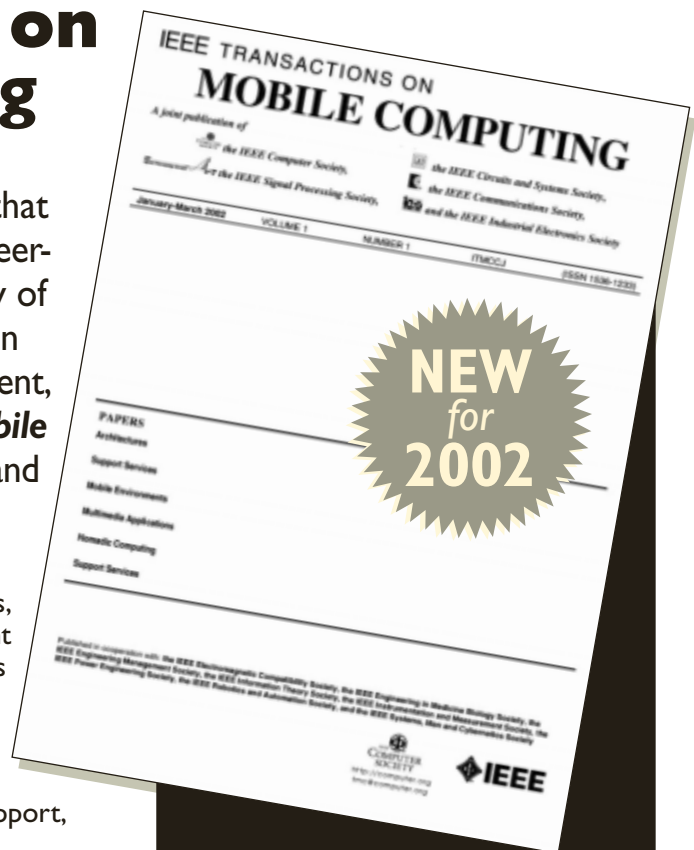
**Algorithm/Protocol Design and Analysis** — online and mobile environments, limited bandwidth, intermittent connectivity

**Mobile Environment** — data and knowledge management, performance modeling and characterization, security, scalability and reliability, design, management and operation, systems and technologies

**Mobile Communication Systems** — wireless, cellular and spread-spectrum systems, multi-user and multi-access techniques and algorithms, multi-channel processing, channel coding

**Applications** — location-dependent and sensitive applications, nomadic computing, wearable computers and body area networks, multimedia applications and multimedia signal processing, pervasive computing, wireless sensor networks

**Emerging Technologies** — innovations, research and development, techniques and strategies



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## IEEE Industrial Electronics Society Calendar

**2002 International Conference on Fundamentals of Electronics Communications and Computer Science of IEICE (ICFS 2002)**, Waseda University, Tokyo, Japan, 27 - 28 March 2002; Home-page: <http://www.ieice.org/ess/ESS/icfs2002/>; Prof. Rokuya Ishii, Div. of Elec. & Comp. Eng., Yokohama National University, Tokowadai, Hodogaya-ku, Yokohama 240 8501, Japan; Telephone: +81 45 339 4127; Fax: +81 45 338 1157; E-mail: [ishii@dnj.ynu.ac.jp](mailto:ishii@dnj.ynu.ac.jp)

**2002 IEEE International Joint Conference on Neural Networks (2002 IJCNN)**, Hilton Hawaiian Village Hotel, Honolulu, HI, USA, May 12-17, 2002; Home-page: <http://www.wcci2002.org/>; Contact: Dr. David B. Fogel, Natural Selection, Inc., 3333 N. Torrey Pines Ct., Suite 200, LaJolla, CA 92037, USA; Telephone: +1 619 455 6449; Fax: +1 619 455 1560; E-mail: [d.fogel@ieee.org](mailto:d.fogel@ieee.org)

**6th International Conference on Intelligent Engineering Systems 2002, (INES 2002)**, Hotel Adriatic, Opatija, Croatia, May 26-28, 2002; Home-page: <http://ines2002.foi.hr/>; Contact: Imre J. Rudas, Budapest Polytechnic, H-1081 Budapest, Népszínház u. 8, Hungary; Telephone: +36-1-333-451; Fax: +36-1-333-9183, E-mail: [i.rudas@ieee.org](mailto:i.rudas@ieee.org)

**2002 6th International Symposium on Distributed Autonomous Robotic Systems (DARS 2002)**, Kyushu University, Fukuoka, Japan, 25 - 27 Jun, 2002; Contact: Prof. Tsutomu Hasegawa, Kyushu University, Grad. Sch. Info. Sci. Elec. Eng., Fukuoka 812-8581, Japan; Telephone: +81 92 642 4063; Fax: +81 92 642 4074; Email: [hasegawa@irvs.is.kyushu-u.ac.jp](mailto:hasegawa@irvs.is.kyushu-u.ac.jp)

**7th International Workshop on Advanced Motion Control (AMC'02)**, Maribor, Slovenia, July 3-5, 2002; Home-page: <http://www.ro.feri.uni-mb.si/AMC02/>; Contact: Professor Karel Jezernik, Faculty of Electrical Engineering and Computer Science, University of Maribor, Smetanova 17, 2000 Maribor, Slovenia; Telephone: +386 2 220 7300, Fax: +386 2 220 7315, E-mail: [karel.jezernik@uni-mb.si](mailto:karel.jezernik@uni-mb.si)

**2002 International Symposium on Industrial Electronics (IEEE-ISIE'02)**, L'Aquila, Italy, July 8-11, 2002; Home-page: <http://isie2002.ing.univaq.it/>; Student forum: <http://isie2002.ing.univaq.it/isie2002/student.html>; Contact: Carlo Cecati, University of L'Aquila, Department of Electrical Engineering, Loc. Monteluco di Roio, 67040, L'Aquila, Italy; Telephone: +39-0862434450 / +39-3803118608 (mobile); Fax: +39-086243440; E-mail: [c.cecati@ieee.org](mailto:c.cecati@ieee.org)

**SICE 2002 - 41st Annual Conference of the Society of Instrument and Control Engineers of Japan**, Osaka International Convention Center, Osaka, Japan, 5 - 7 Aug, 2002; Home-Page: <http://www.sice.or.jp/>; Contact: Mr. Masami Namiki, SICE of Japan, Hongo 1-35-28-303, Bunkyo-ku, Tokyo 113-0033, Japan; Telephone: +81 3 3814 4121; Fax: +81 3 3814 4699; Email: [mnamiki@sice.or.jp](mailto:mnamiki@sice.or.jp)

**2002 2nd IEEE Conference on, Nanotechnology (IEEE-NANO)**, Hilton Crystal City, Arlington, VA, USA, 25 - 28 Aug, 2002; Contact: Mr. Clifford Lau, 800 N. Quincy Street, Arlington, VA 22217, USA; Telephone: +1 703 696 0431; Email: [lauc@onr.navy.mil](mailto:lauc@onr.navy.mil)

**4th IEEE International Workshop on Factory Communication Systems (WFCS)**, Malardalen Real-Time Research Centre, Malardalen University, Vasteras, Sweden, August 27-30, 2002; Home-Page: <http://www.mrtc.mdh.se/wfcs2002/>; Contact: Christer Norstrom, Malardalen Real-Time Research Centre, P.O. Box 883, SE-721 23 Västerås, Sweden; Fax: +46-21-103110; Email: [christer.norstrom@mdh.se](mailto:christer.norstrom@mdh.se); Contact: Dr. Richard Zurawski, ISA Corp., P.O. Box. 2561, Alameda, CA 94501-0279, USA; Telephone: +1 510 825 1964; Fax: +1 510 436 4587; Email: [zurawski@sbcglobal.net](mailto:zurawski@sbcglobal.net)

**Applied Electronics 2002**, University of West Bohemia, Pilsen, Czech Republic, 11 – 12 Sep, 2002; Home-Page: <http://www.fel.zcu.cz/konfae/>; Contact: Jiri Pinker, University of West Bohemia, Department of Applied Electronics, Univerzitni 22, 306 14 Pilsen, Czech Republic; Telephone/Fax: ++420 19 722 3315 ; Email: [konfae@kae.zcu.cz](mailto:konfae@kae.zcu.cz)

**2002 IEEE International Workshop on Robot and Human Interactive Communication (ROMAN 2002)**, Japanese-German Center Berlin, Berlin, Germany, 25 - 27 Sep, 2002; Home-Page: <http://www.morpha.de/roman2002/>; Contact: Dr. Erwin A. Prassler, Research Inst. for Applied, Knowledge Processing FAW, Helmholtzstr. 16, D-89081 Ulm, Germany; Telephone: +49 731 501 621; Fax: +49 731 501 999; Email: [prassler@faw.uni-ulm.de](mailto:prassler@faw.uni-ulm.de)

**7th Online World Conference on Soft Computing in Industrial Applications (WSC7)**, On the Internet, September 23 - October 4, 2002; Home-Page: <http://decsai.ugr.es/wsc7/>; Contact: Jose M. Benitez, Univ. Granada, Granada, Spain, Email: [J.M.Benitez@decsai.ugr.es](mailto:J.M.Benitez@decsai.ugr.es); Contact: Oscar Cordon, Univ. Granada, Granada, Spain; Email: [ocordon@decsai.ugr.es](mailto:ocordon@decsai.ugr.es)

**2002 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2002)**, Swiss Federal Institute of Technology Lausanne (EPFL), Lausanne, Switzerland, 30 Sep - 04 Oct, 2002; Home-Page: <http://iros02.epfl.ch/>; Contact: Ms. Marie Jose Pellaud, IROS'02 Desk, DMT-ISR, Ecole Polytechnique, 1015 Lausanne, Switzerland; Fax: +41 21 6933866; Email: [iros@epfl.ch](mailto:iros@epfl.ch)

**2002 International Symposium, on Micro Mechatronics & Human Science (MHS 2002)**, Nagoya Municipal Industrial, Research Institute, Nagoya, Japan, 20 - 23 Oct 2002; Contact: Prof. Fumihito Arai, Dept. of Micro System Engrg., Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464 8603, Japan; Telephone: +81 52 789 3116; Fax: +81 52 789 3115; Email: [arai@mein.nagoya-u.ac.jp](mailto:arai@mein.nagoya-u.ac.jp)

**The 28th Annual Conference of the IEEE Industrial Electronics Society (IECON'2002)**, Meliá Lebreros Hotel, Sevilla, Spain, Nov. 5 to 8, 2002; Home-page: <http://iecon02.us.es/>; Contact: Leopoldo Garcia Franquelo, Escuela Superior de Ingenieros, Departamento de Ingenieria Electronica, Camino de los Descubrimientos s/n, 41092 Sevilla, Spain; Telephone: +34-95-4487365/72; FAX: +34-95-4487373/63153; Email: [leopoldo@gte.esi.us.es](mailto:leopoldo@gte.esi.us.es)

**2002 IEEE International Conference on Industrial Technology "Productivity Reincarnation through Robotics & Automation" (IEEE-ICIT'02)**, Shangri-La Hotel, Bangkok, Thailand, December 11-14, 2002; Home-page: <http://www.ise.ait.ac.th/conferences/icit02.htm>; Contact: Dr. Manukid Parnichkun, Asian Institute of Technology, PO.Box 4, Klongluang, Pathumthani, 12120, Thailand; Telephone: +66 2524 5229; Fax: +66 2524 5697; E-mail: [manukid@ait.ac.th](mailto:manukid@ait.ac.th)

**2003 International Electric Machines And Drives Conference (IEMDC'03)**, Monona Terrace Convention Center Madison, Wisconsin, USA, June 1-4, 2003; Home-page: <http://www.iemdc03.org>; Contact: Prof. Thomas A. Lipo, IEMDC, University of Wisconsin, 1415 Engineering Drive Room 2557, Madison, WI 53706; Telephone: +1 608 262 0287; Fax: +1 608 262 5559 ; E-mail: [lipo@engr.wisc.edu](mailto:lipo@engr.wisc.edu)

## Call for IE Transactions Special Section on Industrial Information Technology

The IE Transactions will host a special section on the topic of Industrial Information Technology (IIT) in early 2003. This special issue is being organized by the IES Technical Committee on Industrial Information Technology. (For more details, see <http://www.cs.virginia.edu/~acw/iit/>.) Papers are sought from both academic and industrial IIT researchers and practitioners. Papers on all IIT topics are welcome, but we are especially interested in:

- industrial monitoring and control using the Internet
- network control systems
- distributed control
- wired and wireless Internet access
- multimedia
- multicast
- network edge services
- Java
- Jini
- application of software engineering principles and concepts
- software reuse
- cost-effective software development
- avoiding errors and negative interactions
- data privacy and security
- system reliability
- communications protocols
- system architecture and design
- factory modeling
- factory automation
- emerging technologies

Submit your paper electronically to Professor Alfred C. Weaver, University of Virginia, [weaver@virginia.edu](mailto:weaver@virginia.edu), by July 1, 2002. PDF format is preferred. All papers will be fully reviewed and authors will be notified of acceptance by October 1, 2002. The anticipated publication date is early 2003.