Dear IES Members and Colleagues,

Recent virus attack on our newsletter distribution mailing list caused a major inconvenience for our subscribers. A computer at some location that I was able to trace generated several messages with my return address and the mailing list address as a recipient. Unfortunately, e-mail technology in its present form is very susceptible to forgery of the message origin. Many subscribers believed that I really sent those messages, or that at least my computer was infected. Neither of those two things happened it was a third party beyond my control. Fortunately, the list was shut down quickly, after “only” about fifty messages were distributed.

Unfortunately, IEEE does not offer any other form of electronic distribution. I will probably have to set up my own mailing list in a more secure environment that would not have an easy and automated remote access that could be compromised so easily. I also believed that IEEE mailing lists are protected by famous IEEE antivirus software. Well, unlike email alias they are not. The list to my disappointment in fact broadcasted a live virus. All of that happened soon after we updated our list to reflect the current society membership.

Originally, I wanted to write this column about our plans for further development of the newsletter. We want to expand the New Technology section and make it password protected on the Newsletter Web site with the password distributed only to our members. There will be two sets of fast download and high printing quality versions of the newsletter. The one accessible only to members will be expanded.

However, instead I am writing this apology. This kind of virus spread should not happen again. I am sorry for the inconvenience although it was not my fault, and hope that you did not experience too much of damage, and only a little annoyance.
SOCIETY NEWS

Summary of the Administrative Committee Meeting for the Industrial Electronics Society

Charles W. Einolf, Jr., Secretary

- The IES AdCom meeting was held at the Imperial Palace Hotel in Las Vegas, Nevada on March 23, 2003.
- Division X Director Enrique Ruspini attended the AdCom meeting and discussed the need for electing more competent members to the IEEE Board of Directors. A position of Director-Elect is being proposed to improve the continuity and capabilities of the Directors.
- The AdCom approved a proposal for a new IES Transactions on Industrial Informatics and President Okay Kaynak plans to bring the proposal before TAB in November 2003.
- Leopoldo Garcia-Franquelo, General Chair for IECON’02, reported that the conference was one of the most successful in IES to-date.
- The AdCom approved INDIN’03 to be held in the Banff National Park, Alberta, Canada during August 2003. The conference theme will be Industrial Informatics.
- Carlos Couto, Vice President for Conferences, presented proposals that were approved by the AdCom for:
  - ICF’03 to be held in Maribor, Slovenia during December 2003;
  - IECON’04 to be held in Pusan, South Korea during November 2004;
- Karel Jezernik, Vice President for Workshops, presented a proposal to the AdCom for ROMAN’03. The AdCom approved the workshop to be held in Milbrae, California during September 2003.
- The AdCom approved a proposal submitted by Ramu Krishnan, Vice President for Publications, for an online paper review policy for the IES Transactions. The policy is expected to be implemented by August 2003.
- The next AdCom meeting will be held in conjunction with IECON’03 on Friday, November 7, 2003 in Roanoke, Virginia.

Next Administrative Committee Meeting for the Industrial Electronics Society

The next AdCom meeting will be held in conjunction with IECON’03 on Friday, November 7, 2003 in Roanoke, Virginia. The tentative schedule will be posted as it becomes available.

INDIN - New IES Conference

Industrial Electronics Society sponsors a new conference in the area of industrial information technology. IEEE has just approved IEEE International Conference on Industrial Informatics - INDIN. The first conference is to be held in Calgary, Canada in late August 2003. Although time is short for publicizing this entirely new even the organizers home that there will be enough interest. Please support the conference.

Support our new initiative, consider presenting our paper at INDIN. Submission is still open!

Professor Isao Takahashi

To the IEEE IES friends:

I have the sad task of announcing of the sudden death of Professor Isao Takahashi, the Nagaoka University of Technology, at the age of sixty due to the traffic accident on January 13, 2003. The late Professor Isao Takahashi has been a frequent contributor to the IEEE Transactions on Industrial Electronics.

He has done a lot of pioneering works in the area of power electronics, including PWM inverter, direct torque control, energy storage and so on.

He is survived by his wife Yuko Takahashi, one son and two daughters.

I extend my deepest sympathy to the Takahashi family.

With sympathy

Professor Kouhei Ohnishi, Ph.D FIEEE
IEEE IES VP-Technical Activity
Keio University, Japan
BOOK REVIEW

Two-Volume Series of Books on Electric Drives by Professor Ned Mohan, IEEE Fellow

Professor Ned Mohan of the University of Minnesota has written a two-volume series of textbooks on electric drives. The books represent viewpoints from many colleagues, especially due to the feedback from the participants in six National Science Foundation sponsored educational workshops that Dr. Mohan has organized, starting in 1991, in the fields of Power Electronics and Electric Drives. These two excellent books, where the students need no prior knowledge of electric machines theory, are designed to teach from basics to advanced topics in electric machines and drives in only two semesters. In writing these books, the author has paid a great deal of attention to generate student interest, at the same time provide them with a solid foundation in the field of Electric Drives, without any prior knowledge of Electric Machine Theory.

The approach of the author in these two textbooks is totally unique and represents a sharp departure from that in traditional textbooks now in use for several decades. In the traditional approach, for example, induction motors are first discussed for line-fed operation, and only in later chapters their operation for speed control is discussed. In the approach used by the author, electric machines are introduced on the premise that they will be operated in a controlled manner through power electronics, albeit discussed in their steady state in the first of the two-volume series. This approach has two distinct advantages:

- It allows electric machines to be introduced in the context of exciting applications of electric drives to generate student interest and a large increase in student enrollment is documented at schools that have tried this way of teaching.
- Electric machines are analyzed in the first textbook in a manner that reveals the physical basis on which they operate, thus allowing a clear understanding of how they ought to be controlled for optimum performance as discussed in the second textbook. The author has succeeded in making the space-vector theory approachable to undergraduates in the first introductory course, in fact, making it easier than phasor calculations by providing physical meaning to space vectors. The author, to his credit, also satisfies those looking for tradition equivalent circuits of machines for line-fed operation.

In addition to the traditional Solutions Manual for instructors of the back-of-the-chapter problems, these two textbooks are accompanied by unusual teaching aids. Each of these textbooks contains a CD-ROM with a large number of PowerPoint-based slides that students can print and bring to classes to take notes on, and to quickly review the material before exams. That's not all - the Instructor's CD (only for the instructors) contains audio clips, usually a minute or two long attached to each slide, that highlight the pitfalls to be avoided and the main points to be emphasized in class. Instructors


Reviewed by Tore Undeland, Prof. Dr.Ing, IEEE Fellow, Norwegian University of Science and Technology, Norway
using this approach will find these CDs extremely useful in preparing and organizing their lectures. The second textbook also contains the Simulink files of the design examples.

In summary, I do strongly recommend all engineering educators in this field to evaluate these two textbooks for themselves and I believe that they (and their students) will be pleasantly surprised.

Given the emphasis on applications, these books are equally valuable for self-learning to practicing engineers who wish to control machines for optimum performance in various applications.

IEEE Industrial Electronics Society Newsletter

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CHAPTER NEWS

Five Years of History  
Joint IEEE IAS/PELS/IES Chapter

Founded on December 18, 1997  
IEEE-PELS Best Chapter Award for 2001  
http://www.ewh.ieee.org/r8/germany/ias-pels/

This is a short report about our five-year old chapter, i.e. about its policy, its development, and its activities in past, present and future.

On December 18, 1997 a small group of 13 power electronics / drive control professionals came together at the Institute of Power Electronics and Electrical Drives of the University of Technology in Aachen to found the IEEE IAS German Chapter. The founding Chairman was Prof. Dr. ir. Rik W. De Doncker, IEEE Fellow (Aachen). In March 12, 1999, the chapter became a Joint IAS/PELS and February 28, 2001 a Joint IAS/PELS/IES Chapter.

The policy of the chapter is “to join and not to divide.” The membership development shows that many former guests of the meetings have become IEEE members, obviously because they enjoy the chapter activities. Currently the chapter has 310 regular and 293 guest members, which means that we have to manage an address list of 603 people.

Naturally, it is not easy to communicate with some 600 members. Thus, we make good use of sending messages by email and giving further information on our homepage at http://www.ewh.ieee.org/r8/germany/ias-pels/.

Being proud of having so many members, we are also aware that the number of actually active members is crucial for successful work. Our statistic shows that the hard core of our chapter consists of about 40-180 active members, which might explain why we have reached an average of a hundred participants at each meeting by now.

Our chapter has one Life Fellow (Professor W. Leonhard) and nine Fellows. At present another Fellow nomination is being implemented with the chapter acting as an endorser. Two thirds of the chapter's membership have already complied with the requirements for Senior Members. Hopefully, the majority will apply for it in near future.

It has become tradition to hold three meetings annually. The survey of all our meetings since 1997 shows that there were almost twice as many participants at the meetings organized in conjunction with the local industry compared to the meetings held at universities. Consequently, we should hold more meetings in companies, and the meetings at universities should be in cooperation with industry in future.

We hope we will be able to keep up the number of a hundred participants per meeting. It is encouraging that we have even had three meetings exceeding that number.

It is a kind tradition to distinguish the meetings by giving each a characteristic title. For example the meeting in Braunschweig bears the name “Meeting of triple anniversaries”. The name originated in fact that at that time we commemorated three important anniversaries of our related fields of technology then: the 50th anniversary of the vector theory, the 30th anniversary of the field oriented control and the 20th anniversary of the microprocessor control of asynchronous machines. Outstanding representatives of that historical period took part as invited lecturers and leaders of round-table discussions.

Latest meetings

The “Largest meeting ever” was held at Siemens Traction Drives / Large Drives in Nürnberg in spring 2002. After a sightseeing tour and a common dinner on the first day, we spent an excellent second day at the company Siemens. After a general lecture, one invited paper and four technical lectures the participants learned about the manufacture of traction drives and inverters up to 5 MW. The meeting concluded with honoring:

- Prof. M. Depenbrock (Ruhr-University, Bochum): Direct Control of Stator Flux Linkage and of the Torque of Induction Machines
- Prof. K. Hasse (Technical University Darmstadt): 30 Years and More: Review of Field Oriented Control with the Best Paper Award for their lectures given at the previous chapter meeting in Braunschweig.

The other two meetings of last year were held at the famous traditional Institutes of Electrical Engineering of the universities in Dresden and Karlsruhe. The one in Dresden was the ‘Most beautiful meeting ever’!. One of the highlights of the social program was the sightseeing tour in a rented historical tramway of the Transportation Museum Dresden. Receiving the PELS Best Chapter Award handed over by our past chapter chair Rik De Doncker was another highlight of the meeting. Shortly after our chapter visit, the beautiful city was flooded. The chapter donated a total of EUR 920.00, partly taken from the monetary award and partly from a collection among the chapter members, to the Technical University of Dresden to help the flood casualties.
In Karlsruhe, at the “Fifth anniversary meeting” we enjoyed not only the lectures given by the local speakers of the traditional Institute of Electronic Engineering and by Caio A. Ferreira, IAS Distinguished Lecturer from the US (“Aerospace Electrical Power & Actuation”), but also the chapter birthday party with an IEEE-cake and the chapter banner. As the chapter holds board elections every second year, another significant event was the election of new chapter officials.

Furthermore, there we started the project ‘European Chapter Support’ sponsored by the IEEE Germany Section. As a first step, we invited the chapter chair and past chair of Switzerland and The Netherlands to exchange experience and promote activities of European chapters. We agreed on organizing joint meetings and visiting the meetings of other chapters.

As a second step in that direction, we have invited members and chairs of existing chapters from France, Slovenia, Croatia and Serbia to our next meeting. Additionally, we have invited four professionals from Eastern European countries (Romania, Hungary, Slovakia and the Czech Republic) where IAS, PELS and IES chapters have not been established yet. Especially the latter invitations, we hope, will become another of our successful contributions to the steady growth of IEEE in Region 8.

The first meeting of the year 2003, the ’Most effective meeting ever’ with 101 participants, took place at the company Robert Bosch GmbH, Stuttgart. There were two distinguished lectures (‘Power Electronics - Past, Present and Future’ and ‘High Power High Performance AC Drives - A Technology Review”) given by A.K. Chattopadhyay, DL of IAS from India, and four lectures contributed by staff members of the organizing company. Having received the Chapter Award 2002 the professors:

- Prof. G.Müller, Honorable Member of the Chapter (Techn. Univ Dresden): Actual Problems of Determination of Power Losses of Asynchronous Machines,
Pictures from the meeting at Technical University of Dresden, Institute of Electrical Engineering:
Sightseeing tour with the historical tram of the Museum of Transportation, Dresden.
Group of participants in front of the historical venue “Görgesbau”, Technical University of Dresden.

Pictures from the meeting at Robert Bosch GmbH, Stuttgart:
Group of participants (the left photo.)
Best Paper Award 2002 celebration.

Pictures from the meeting at University of Karlsruhe, Institute of Electrical Engineering: Caio A Ferreira, DL of IAS with the 5th Chapter Anniversary Cake; Caio A Ferreira, DL of IAS and the Chapter Chair with the Chapter Banner;
AROUND THE WORLD

Invitation to attend ICIT’03 in Slovenia

Karel Jezernik
General Chairman

The next IEEE International Conference on Industrial Technology will be held in Slovenia on December 10-12, 2003. Slovenia is a green and diverse country that lies in the Central European geographical area, between Italy, Austria, Hungary and Croatia and which embraces all the beauty of the Old Continent. A nation of two million, with a distinctive and clear identity, which has preserved its individuality in this treacherous sub-alpine crossroads for 1,500 years, built and preserved during this period 3,000 churches, created a rich artistic heritage, published the Slovene translation of the Bible as early as 1584 and today has many museums, castles and galleries.

The conference site Maribor is the economic and cultural centre of northeastern Slovenia. It is situated at the cross-section of traffic routes leading from Central to southeastern Europe, and from western Central Europe to the Pannonian Lowland. This location has not only made Maribor prominent in past and present history but, because of it, Maribor’s prominence is likely to continue in the future.

Conference location, Hotel Habakuk, can be found situated in natural surroundings on the slopes of Pohorje - here one can breathe the fresh morning air and be lulled to sleep in the evening by the mysterious rustling in the pine forest. Despite its superb position, away from the bustling city it is only a ten-minute drive to the centre of Maribor. When the snow covers Pohorje’s steep slopes, guests can go skiing or snowboarding on extensive runs through pine forests. In the immediate vicinity of the hotel there is the Snow stadium which is floodlit for night skiing and every winter annual women’s World Cup race - the Zlata lisica (meaning The golden fox) - is held on this piste.

The technical program will be organized in seven topics: Computational Intelligence, Mechatronics, Signal Processing and System Control, Industrial Information Technology, Power Electronics, Teleoperation and Embedded Systems. The conference will feature several special sessions, tutorials and invited sessions.

Slovenia is one of the youngest independent states in Europe and will become the member of the European Union in 2004. The ICIT’03 conference will be a major opportunity for its industry to strengthen already strong links with more demanding world markets and build new ones. Come join us for a high quality technical program, an exciting cultural experience and excellent ski opportunity. More detailed information is available on the ICIT’03 home page at http://www.ro.feri.uni-mb.si/ICIT03/
Invitation to attend IECON 2003 in Roanoke, Virginia, USA

R. Krishnan,
General Chair, IECON 2003

I am honored and excited to invite you to the 29th Annual Conference of the IEEE Industrial Electronics Society in Roanoke, Virginia, USA from November 2 to 6, 2003. The conference is co-sponsored by the Society of Instrument and Control Engineers of Japan (SICE), Virginia Tech (VT) and its Center for Organizational and Technological Advancement (COTA).

IECON 2003 is the flagship conference of the IEEE Industrial Electronics Society. It stands true to its tradition of bringing cutting edge research results and technologies to solve industrially relevant problems. Many of the modern fields were nurtured in their nascent state in various IECONs, to name a few, robotics, mechatronics, neural and fuzzy control applications to variable speed motor drives and power electronics and sensor-less operation, industrial informatics, modern and intelligent control combined with computers for industrial process control and MEMS for actuation and measurement. This IECON will not be any different from its predecessor in this regard.

We will have leading researchers and practitioners present to give invited talks (about 6), special session papers on the state of art in these fields, and to conduct tutorials (about 9) and panel sessions (about 2 or more). Importantly there will be regular technical sessions with ample time for discussions and breaks between sessions for interaction. There will be a number of social functions for us to make friends and enjoy the best of the culinary and cultural gifts of this region. There will be special reduced registration fees for students. On top of it, travel awards are available for students who have authored/co-authored papers for this conference.

The conference is hosted at the Hotel Roanoke and Conference Center that is a historic hotel in Virginia. The hotel has first class accommodations and situated near the downtown Roanoke. The conference center attached to the hotel has immense facilities for all kinds of conference requirements. It also houses one of the finest restaurants in the region. The memorable campuses of University of Virginia (founded by Thomas Jefferson) and Virginia Tech (the largest technical university in Virginia) are, respectively, 70 and 40 miles from the conference venue. You may want to take this opportunity, therefore, to visit the nearby university laboratories and meet with faculty friends in your area of research. Roanoke is the fourth largest city in Virginia, a state that is full of history. Washington DC, the capital of US is 220 miles away and Richmond, the historic capital of Virginia is only 170 miles from Roanoke. Around Roanoke is the Blue Ridge Park Way stretching over 400 miles, the most scenic drive in USA. Within a few miles from the conference venue is a 500-mile shore lake, and other natural and sporting venues including great golf grounds. I invite you cordially to come and take a few more additional days to enjoy the place and its surroundings for a memorable conference and vacation.
**NEW TECHNOLOGY**

**WISENET - Wireless Network of Motes**

Joseph Dunne and David Patnode  
Bradley University, USA

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**Introduction**

MIT’s periodical Technology Review (02/2003) listed wireless sensor networks as one of the "10 Emerging Technologies That Will Change The World." David Culler, a computer scientist at the University of California, Berkeley and one of the developers of TinyOS, predicts, "Low-power wireless sensor networks are spearheading what the future of computing is going to look like." The EE Times Network also recently published an online article [describing wireless sensor networks and their potential applications](http://www.eetimes.com/story/OEG20030128S0028/) describing wireless sensor networks and their potential applications.

The technological drive for smaller devices using less power to provide greater functionality has created exciting new possibilities in sensing and control applications. Low-power microcontrollers coupled with RF transceiver modules and sensors allow a wireless, battery-operated network of sensor modules ("motes") to acquire environmental data that can then be stored, analyzed, and accessed via a computer network. This emerging technology has unbounded application in such fields as industrial controls, security, and environment monitoring. For example, one might use a wireless sensor network to monitor environmental conditions in an office building. Such a network would allow the efficiency of heating and air conditioning systems to be quantitatively analyzed, enabling better cost-reduction strategies to be devised. Honeywell International, Inc., a global leader in sensing, automation, and environment control, is one company interested in this and related applications. Honeywell is providing support and partial funding for this project.

The primary goal of WISENET is to create a wireless sensor network to monitor the temperature, humidity, and light in labs and offices in one building. The system collects this data to be stored in a computer database for later retrieval and analysis via a web-interface. Low-power consumption (equating to long battery life) is an important feature. Another key feature is self-organization: a randomly-distributed arrangement of sensor motes forms a robust ad-hoc network to ensure that data from any mote, anywhere in the network, will be routed to the computer database. The TinyOS project [at University California, Berkeley](http://webs.cs.berkeley.edu/tos/) is an open-source operating system for motes designed with these features in mind.

However, TinyOS is currently only usable on a single family of microcontrollers. Newer microcontrollers, such as the Chipcon CC1010, have more features and allow smaller, lower-power designs. In addition, there is a broad class of microcontrollers, which use the Intel 8051 core (including the CC1010) that is unable to use TinyOS due to fundamental architectural differences. A secondary objective of WISENET is to support the migration of TinyOS to 8051-core systems by providing appropriate development tools to the open-source community.

**Design Methodology**

WISENET is being developed using a top-down design methodology. The first step is defining the three primary subsystems and how they interact (see System Block Diagram, Fig. 1). The system development involves a combination of hardware and software design, utilizing both custom solutions and 'commercial off-the-shelf' (COTS) components. Examples of COTS components include mySQL ("SQL database"), PHP (programming language of the "web program"), and the Apache web server ("HTTP Server"). These components are linked through a custom web program developed to display the acquired data to the user in an easy-to-understand format.

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**Figure 1. System Block Diagram.**

The use of standard interfaces (such as HTTP, aka the World Wide Web) is also an important design consideration. Using a web browser as the user interface saves development, implementation, deployment and maintenance time. Instead of creating a custom program that must be downloaded, the
user can simply use any web browser to retrieve and display the collected data via the Internet.

Figure 2. Sensor Mote Design.

The data acquisition side of WISENET contains the mote hardware, TinyOS, and WiseDB. The hardware design, based on the CC1010 microcontroller (Fig. 2), must balance functionality with power-consumption, cost, and manufacturing considerations. TinyOS was chosen as a real-time software system for the motes because of its modular architecture, efficient utilization of resources, and emphasis on low-power consumption. Its modular architecture consists of a hierarchy of software components (see figure 3). This approach allows higher-layer components (such as a routing component) to be re-used on different hardware platforms, decreasing application development time and increasing overall functionality. For WISENET, the goal is to replace the bit- and byte-layer components (which correspond to the hardware and the software that talks directly to the hardware), without affecting the higher layers.

Figure 3. TinyOS Component Layers.

WiseDB is a custom application that interfaces with TinyOS at the messaging layer to receive sensor data and store it in the SQL database for later retrieval and analysis. It must translate between different protocols (namely TinyOS's messaging component and SQL), as well as provide a mechanism for commands to be transmitted to the sensor network, which would allow in-network reprogramming and other future functionality.

Results

WISENET is in operation since Spring 2003. Prototype sensor motes (see Fig. 4) run the modified TinyOS. Upon being placed in a region, the motes form an ad-hoc network and begin transmitting environmental data (light, temperature, and humidity). The server, running WiseDB, stores this data. The web-based data access system will provide the user with an easy-to-use interface to the acquired information. Anticipated running time of a two AA-alkaline battery powered mote is up to six months.

Figure 4. CC1010 Prototype board (upper photograph) and a Sensor Mote (lower photographs).

Conclusion

WISENET was completed after about 800 hours of work porting TinyOS, developing the web interface and designing the extension modules with sensors. Its concept will have a myriad of real-world applications. In addition, the development work on TinyOS will be shared with the open-source community so that it may be used in future applications. The hardware design represents a step forward in sensor mote functionality and flexibility by utilizing the state-of-the-art CC1010 microcontroller. WISENET is a step to the future of wireless sensing technology.

Please visit the project Web site at http://cegt201.bradley.edu/projects/proj2003/wisenet/ for more information and to download the source code.
Call for Papers

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General Chair
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Amanda M. Staley, USA

The 29th Annual Conference of the IEEE Industrial Electronics Society
The Hotel Roanoke & Conference Center, Roanoke, Virginia
November 2nd to 6th, 2003

Sponsored by: IEEE Industrial Electronics Society (IES)
Tech. Co-Sponsored by: Society of Instrument and Control Engineers (SICE)
Tech. Co-Sponsored by: Virginia Tech and Center for Organizational and Technological Advancement (COTA)

IECON '03 is an international conference on industrial applications of electronics, control, robotics, vision and sensors, signal processing, instrumentation, automation, artificial intelligence, computer networks and emerging technologies. The objectives of the conference are to provide high quality research and professional interactions for the advancement of science, technology, and fellowship. Papers with new research results are encouraged for submission. Topics of interest include but are not limited to:

COMPUTER AND CONTROL SYSTEMS: Advanced control and measurement, computer and microprocessor-based control, signal processing, estimation and identification techniques, application specific IC's, automotive electronics, non-linear control systems, industrial applications of neural networks, fuzzy algorithms, evolutionary computing, and intelligent systems. Chairs: Jim Hung, USA and Rokuya Ishii, Japan.

INDUSTRIAL INFORMATION TECHNOLOGY: Robotics, industrial vision, motion control, autonomous mobile robots, electrical vehicles, intelligent transportation, factory communications, flexible manufacturing system, industrial automation, process automation, CAD/CAM/CAT/CIM and LANs, industrial applications of internet technologies, multimedia, and wireless communications. Chairs: Alf Weaver, Michael Condry, and Alexander Malinowski, USA.

POWER ELECTRONICS: Power electronic devices and systems, high frequency power converters, digital control of power electronics, energy systems, electrical drives, static VAR and harmonic compensations, power management, and analytical and simulation methods. Chairs: Bimal K. Bose, USA, and Marian P. Kazmierkowski, Poland.


Submission of Papers: The working language of the conference is English. Submit the full paper using the following layout: IEEE Transactions Format, limited to 6 pages, including figures and references (maximum size 2MB). Authors are strongly encouraged to prepare the manuscripts in the IEEE two-column format, using PDF with embedded fonts (i.e., "Press" settings in the Acrobat Distiller). Only manuscripts in PDF or PostScript formats will be accepted. Please, visit the Conference Web page and follow the submission instructions.

Author’s Schedule:
Deadline for Submission of Full Papers
April 30, 2003
Notification of Acceptance
July 15, 2003
Deadline for Submission of Final Manuscripts
September 5, 2003

For further information, please see the conference web page:
http://iecon03.crts.vt.edu
CALL FOR PAPERS

Sponsored by: IEEE Industrial Electronics Society
Universidade Nova de Lisboa-FCT-DEE and UNINOVA-CRI

Aim: The aim of the conference is to bring together researchers and practitioners from the industry and academia and provide them with a platform to report on recent advances and developments in the newly emerging areas of technology, as well as actual and potential applications to industrial and factory automation.

Accepted Papers: Research papers; reporting on new developments in technological sciences. Industry and development papers; reporting on actual developments of technology, products, systems, and solutions. Tutorial papers and survey papers.

Topics within the scope of the workshop include:

- Information Technology in Industrial and Factory Automation: Development Platforms and Frameworks: .NET, J2EE; Programming languages: Java, C#, etc.; Operating Systems: Databases and Web Interfaces; Mobile Computing, Network Computing, Client/Server Computing; Distributed Objects and Components; CORBA, COM, COM+, DCOM, etc.; Groupware.
- Industrial and Factory Communication Systems: Real-time Communication and Applications; Formal Description Techniques; Multimedia Communication Support; Distributed application platforms (CORBA, Java/Jini, etc.); Internetworking, Interoperability; Configuration Tools and Network Management; Fieldbus Networks; Cell Networks; High Speed Networks; Wireless Networks; Intranet and Internet Access; Factory Applications and Case Studies.
- Real-Time and (Networked) Embedded Systems: Design and Implementation; Environments and Tools; Models of Computation and Formal Methods; HW/SW Co-Design; IP Cores and Platforms; Re-configurable Systems; System-on Chip; Network Embedded Systems Technology; Real-Time Executives and Operating Systems; Languages; Case studies.
- Intelligent Sensors and Sensor Networks: Design and Implementation; Development Environments and Tools; Hardware/Software; Data Integration and Fusion; Algorithms; Wireless Integrated Networked Sensors; Wideband Networked Sensors; MEMS Sensors; System Architecture; Power Supplies; Communication Modes; Case Studies.

Special session organization: Special sessions can cover topics belonging to a specific track, or multi-track subjects, or novel topics not included in the description of tracks. If you are interested in organizing a special session, please visit http://www.uninova.pt/etfa2003/

Tutorials Organization: Tutorials can cover subjects included or related to conference topics. If you are interested in organizing a tutorial, please visit http://www.uninova.pt/etfa2003/

Submission of Papers: The working language of the conference is English. Two types of submissions are solicited: Long Papers - limited to 8 double column pages. Work-in-Progress and Industry Practice – limited to 4 double column pages.

Prospective authors are invited to visit the conference web site at the following URL:

http://www.uninova.pt/etfa2003/

Manuscripts must be submitted electronically in PDF format, according to the instructions contained in the Conference web site.

Paper Acceptance: Each accepted paper must be presented at the conference by one of the authors. The final manuscript must be accompanied by a registration form and a registration fee payment proof. All conference attendees, including authors and session chairpersons, must pay the conference registration fee, and their travel expenses.

Author’s Schedule:

- Deadline for submission of long papers: April 30, 2003
- Notification of acceptance of long papers: June 8, 2003
- Notification of acceptance of work-in-progress papers and Industry practice: July 8, 2003
- Deadline for submission of work-in-progress papers and Industry practice: June 15, 2003
- Deadline for submission of final manuscripts: July 8, 2003

FURTHER INFORMATION:

ETFA’03 Conference Secretariat
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http://www.uninova.pt/etfa2003/
Background: As industrial systems become more intelligent, automated, and distributed, and as monitoring and control shift more to the Internet, the information technology components of industrial processes become of primary importance. Industrial Information Technology is now something very much discussed. This conference is intended to be the first one in a series to be held annually with very close cooperation of industry.

Objectives: The conference aims to bring together experts from industry and academia working towards the development of enabling control, information and communication infrastructures supporting the deployment of an integrated coordination backbone for global collaborative enterprises with dynamic, flexible, agile and reconfigurable organizational structures. In response to today’s world dynamics we will especially focus on the deployment of e-Logistics infrastructures for emergency response management in agile industrial environments.

Topics: The conference will be organized around the following main tracks.

- Intelligent Production Systems
- e-Factory: Integration of Control, Communication and Information Technologies
- e-Logistics, Systems Interoperability and Human Machine Interface
- Security and Safety
- Methodologies and Tools

The topics to be covered within these tracks can be found on the web site.

Paper submission: Prospective participants are invited to electronically submit an extended summary (700-1000 words, text only) of their work following the instructions available at the web site of the conference.

Submission deadlines:

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<th>Type of Submission</th>
<th>Deadline</th>
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<td>Extended summary submission</td>
<td>15 March 2003</td>
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<td>Special session proposals</td>
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<td>Notification of peer review results</td>
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<td>Conference proceedings</td>
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Call for Papers
IEEE ICIT’03 – MARIBOR
International Conference on Industrial Technology

December 10 - 12, 2003
Hotel Habakuk, Maribor, Slovenia

Sponsors: IEEE Industrial Electronics Society and University of Maribor

Scope of the Conference: The purpose of the conference is to provide a forum for presentation and discussion of emerging technology in the industrial electronics. Additionally, it brings together researchers from industry and academy, who are active in the field of industrial information technology, to discuss current developments and future perspectives.

Technical Topics:
1. Computational Intelligence: Industrial applications of neural nets, fuzzy algorithms, evolutionary computing and intelligent systems.
3. Signal Processing and System Control: Advanced control and measurement, computer and microprocessor-based control, data reduction and signal processing, estimation and identification techniques, instrumentation electronics, automotive electronics, non-linear control systems, application specific ICs, integrated systems and processes.
5. Power Electronics: Power electronic devices and systems, high frequency power converters, digital control of power electronics, energy systems, electrical drives, static variable and harmonic compensations, analytical and simulation methods.
6. Teleoperation: Telerobotics, teleoperated medical applications, teleoperated vehicle, virtual environments, human machine interface, education technology transfer.

Special Sessions and Tutorials: The conference will feature several special sessions, tutorials and invited sessions. If you are interested in organising a special session, please contact IEEE ICIT’03 Secretariat.

Submission Format: Prospective authors are invited to submit an abstract and summary in English electronically (either PDF format or PostScript format), formatted as follows. First page: title, authors, mailing address of each author, telephone and fax numbers, e-mail addresses, preferred topic and subject area, and 200 words abstract. Second and succeeding pages: title, 1000-word summary, figures and references. It should include a clearly defined problem statement supported by the relevant references. It should state why the work was undertaken and what are its outcomes. The development description should be comprehensive enough to allow the assessment of the work’s originality and contribution to the technical area. Our e-mail submission address is ICIT03@uni-imb.si, the subject of the e-mail should be ICIT PAPER SUBMISSION.

Paper Acceptance: Each accepted paper must be presented at the conference within a 20 minutes period and the manuscript must be accompanied by a paid registration. All conference participants, including authors and session chairpersons, must pay the conference registration fee and their own travel expenses.

For the further information and/or inquiry, please contact to:

IEEE ICIT’03 Secretariat
Faculty of Electrical Engineering and Computer Science
University of Maribor, Smetanova 17
2000 Maribor, SLOVENIA
Fax: +386 2 220 7315
E-mail: ICIT03@uni-imb.si
ICIT03 on WEB: http://www.ro.feri.uni-imb.si/ICIT03/

Deadlines:
Summary submission: June 14, 2003
Notification of acceptance: August 18, 2003
Final manuscript due: October 17, 2003
IEEE Industrial Electronics Society Calendar

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, USA; Telephone: +1 608 262 0287; Fax: +1 608 262 5559 ; E-mail: lipo@engr.wisc.edu

2003 IEEE International Symposium on Industrial Electronics (ISIE’03), Rio de Janeiro, Brasil, June 9-12, 2003; Home-page: http://isie2003.coe.ufrj.br/; Contact: ISIE2003 c/o Walter Suemitsu PEE, COPPE - UFRJ, CP 68504, 21945-970 Rio de Janeiro, RJ Brazil; E-mail: isie2003@coe.ufrj.br

The 11th International Conference on Advanced Robotics 2003 (ICAR 2003), University of Coimbra, Coimbra, Portugal, June 30-July 3, 2003; Home-page: http://www.isr.uc.pt/icar03/; Contact:ICAR03 Secretariat, ISR, DEEC, University of Coimbra, Polo II, 3030-290 Coimbra, Portugal; Fax: +351 239 406 672; E-mail: icar03@isr.uc.pt

IEEE Conference on Multisensor Fusion and Integration for Intelligent Systems (MFI’2003), Tokyo, Japan, July 29 – August 1, 2003; Home-page: http://www.cvl.iis.u-tokyo.ac.jp/mfi2003/; Contact: Prof. K. Ikeuchi, Institute of Industrial Science, University of Tokyo, 3rd Dept. Ikeuchi Laboratory, 4-6-1 Komaba, Meguro-ku, Tokyo, 153-8505, Japan; E-mail: ki@cvl.iis.u-tokyo.ac.jp

1st IEEE International Conference on Industrial Informatics (INDIN’03), Banf, Alberta, Canada, August 21-24, 2003 Home-page: http://www.enel.ucalgary.ca/INDIN03/ Contact: Margaret-Anne Stroh, Conference Coordinator, Conference Concepts- event management inc., 1082 Berkeley Drive N.W., Calgary, Alberta T3K 1E1 Canada; Fax: +1403-275-3130; Email: mastroh@ucalgary.ca

IEEE International Conference on Computational Cybernetics (ICCC’2003), Gold Cost, Lake Balaton, Club Siófok, Siófok, Hungary, August 29-31, 2003; Home-page: http://www.bmf.hu/iccc03/; Contact: Imre J. Rudas, Budapest Polytechnic, Népszínház u. 8, H-1081 Budapest, Hungary; Tel.: +36-1-313-8657, Fax: +36-1-333-9183; E-mail: rudas@bmf.hu, szakal@bmf.hu; Co-sponsored by IEEE Joint Chapter of IES and RAS, Hungary


2003 IEEE/RSJ International Conference on Intelligent Robotics and Systems (IROS’2003), Las Vegas, Nevada, USA, October 27 – November 1, 2003; Home-page: http://www.icra-iros.com/iros2003/; Contact: Prof. C.S. George Lee, School of Electrical & Computer Engineering, 1285 Electrical Engineering Building, Purdue University, West Lafayette, Indiana 47907-1285, USA; Tel.: +1-765-494-1384, Fax: +1-765-494-6951; E-mail: iros03@ecn.purdue.edu, csglee@purdue.edu

The 29th Annual Conference of the IEEE Industrial Electronics Society (IECON’2003), Roanoke, Virginia, USA, November 2-6, 2003 Home-page: http://iecon03.crts.vt.edu/; Contact: Prof. Ramu Krishnan, The Bradley Department of Electrical and Computer Engineering, Virginia Tech, 461 Durham Hall, Blacksburg, VA 24061-0111, USA; Tel: (540) 231 4311; Fax: (540) 231 3362; E-mail: kramu@vt.edu

2003 IEEE International Conference on Industrial Technology (ICIT’03), Hotel Habakuk in Maribor, Slovenia, December 10-14, 2003; Home-page: http://www.ro.feri.uni-mb.si/ICIT03/; Contact: Prof. Karel Jezernik, University of Maribor, Smetanova 17, SI-2000 Maribor, Slovenia; Telephone: +386-2-220 7300; Fax: +386-2-220 7315; E-mail: karel.jezernik@uni-mb.si