



Computers and information in Engineering Division Newsletter

Plamen Bliznakov, Editor

Summer 2003

Greetings from the Division Chair



Professor Ashwani K. Gupta

Greetings! On behalf of the CIE community I would like to welcome you for your continued support of the Division. It is your Division and members of the executive committee are there to serve you for

your best interests. The Division continues to be strong and robust with your support and active participation. I am pleased to serve as Chair of the CIE Division during the time of uncertainty, streamlining in the industry and elsewhere, with smaller time and budgets to solve problems. The membership has been stable over the past year but the activities have been on the rise. The member participation at the CIE annual conference has been on the rise with record number of paper submission in recent times. I deeply appreciate your efforts and support to provide your fine contributions at the CIE conference and to make this conference as your premier conference. During the past year the CIE has expanded its activities to participate at the International Mechanical Engineering Conference and Exhibit (called IMECE) in collaboration with the Fuels and Combustion Technologies (FACT) and Heat Transfer Divisions. I am pleased to inform you that this year we plan to have about 9 technical sessions at the IMECE 2003 to be held in Washington, DC. This represents a 3-fold increase in the number of sessions offered last year. Clearly this shows greater member interests in our CIE activities from around the globe.

This year the 23rd CIE conference will be held during September 2-6, 2003 in Chicago, Illinois. I ask you to mark your calendars and provide your support. There will be ample opportunities for networking and exchange of technical information in various technical areas supported by CIE. Our mission is to en-

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Editor's Corner: Shape the Future of Your Organization

Our organization is on the move. ASME is reflecting on its strength and core values, and reviewing its operational practices. This is probably the most serious reshaping of ASME undertaken in the past 20 years.

The new initiative "Continuity and Change" was unveiled at the Summer Annual Meeting in Atlanta. The objective of that initiative is to redirect ASME and make it a true knowledge-based, market-focused, learning organization. ASME aims to become an organization that is more agile, responsive and accountable, an organization that provides real value and benefits to its members and customers, that is a global leader, while at the same time is organizationally sustainable and viable.

ASME has started this process from a position of strength. It has over 120,000 members, in 133 countries, organized in 218 Sections and 37 Divisions. ASME has a broad international recognition. It has formal relations with 66 other organizations. ASME is also financially strong with an annual budget of \$65 million and a reserve fund of \$36 million.

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Greetings from the Division Chair

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hance the practice of engineering through the dissemination of emerging technology and knowledge that will enhance the integration of Mechanical Engineering, software Engineering and Computer Engineering. Our vision is to provide a forum for enhancing the practice of engineering by understanding the application of emerging technologies that impact critical engineering issues of representation, product design and product development, exchange, management and integration of information through the entire engineering product and process life-cycle. Clearly these activities are of significant importance in all sectors of engineering, besides mechanical engineering. I hope that you will take keen interest to enhance your participation in our activities. The CIE Division extends you our warm welcome and an open invitation to participate at the Division annual meeting to be held in conjunction with the 23rd CIE conference in Chicago. I also urge you to participate in any of the technical committee meetings that are of interest to you at the CIE conference. The time for these technical committee meetings is provided in the technical program of the CIE conference. You will have ample opportunities to meet and interact with the executive committee members of the Division as chair and members of the various technical committees.

Computer aided simulation and design continue to provide pivotal role in almost all types of energy conversion systems and product development. The US imports about 95 quads of oil every year. Small improvements in efficiency of a system can save millions or perhaps billions of dollars on the national level. Computer simulation provides performance results for a system that has not been designed or built. The mathematical solution provides result more cheaply, quickly and proficiently than is possible by other means. Several mathematical models of steadily increasing realism and refinement are being developed, both in dimensionality of the model (together with the computational procedures) and in problems associated with the simulation of the physical processes occurring. The increased computational power and advanced algorithms have allowed space and time resolved visualization of the complex flow and process phenomena in a system. These activities will continue to grow in the future as more advanced design and simulation tools become available. The US leadership in CIE and related activities has been driven by challenges and opportunities in the field. The 20th century has seen major achievements with even more envisioned in the 21st century.

In addition to affordable transportation, tangible benefits provided by energy conversion, propulsion and power technologies have been enormous: enhanced learning and comfort, computers and their application, electronics and business opportunities, and better performing and low cost products. In this regard the federal government must give full support for creative new ideas in academia and research Labs for academics and industry to develop into products. Without the federal support the development of new ideas and products will be hampered. The vast economic rewards to be derived from our nation's experience in CIE can be harvested if we have the will to make the national commitment to CIE applications in various sectors of energy conversion and product development. This will provide sustained leadership for the US industry to maintain its role as a world leader.

Our Journal, JCISE, has continued to publish very high quality papers during its second year under the leadership of Jami Shah, technical editor of the journal. I encourage you to consider submitting your quality contribution to this journal. Also I urge you to subscribe to this journal in order to be aware of the latest cutting edge developments in the field.

The reorganization of the different units within the Council of Engineering in ASME is still being worked out. The new set of alliances among Divisions in ASME will serve its members more effectively and efficiently. One of the goals of this reorganization is to provide a bigger umbrella for members with similar interests in different Divisions of ASME. This will provide greater opportunities and services for everyone involved. Significant discussions have taken place at various levels in ASME to promote this reorganization. However, the reorganization will only become a reality with full support of the Divisions involved and the membership. I urge you to take keen interest in this reorganization.

Finally, I encourage you to get involved in the CIE Division activities. You can make positive impact in the Division activities and Engineering profession in general. Please contact any member of the executive committee if we can serve you any better or wish to get involved in the Division activities.

Editor's Corner

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So why is this initiative being undertaken now? ASME is recognizing both the challenges it faces and the new opportunities for which it needs to prepare. First and foremost, ASME wants to focus on its "markets", on the people it serves. The attraction and retention of new, younger members – former student members and young engineers – is of particular importance.

The challenging financial and investment environment also requires a renewed attention to budgeting our activities based on our strategic priorities. ASME has traditionally planned its budgets over three-year periods, tied to the major publication cycles. As part of the financial planning improvement process, ASME wants to phase out the projected investment earnings. The Balanced Scorecard is the tool, which the ASME leadership is employing to tie the budget together with the strategy and the performance of the organization. This concept was created by Drs. Robert S. Kaplan and David P. Norton in 1992, and has been implemented in many corporations, organizations, and government agencies worldwide.

The ASME business model and processes also require a review and update in order to reflect the new challenges and opportunities. Accordingly, the ASME organizational structure is being thought over. A consulting firm is helping identify and assess the Society's options for the future organizational structure to maximize effectiveness and efficiencies (see the note "Moving towards an Institute Structure in ASME" on page 3).

The ASME leadership is looking for a broad participation of the members, volunteers and staff in this process of renewal and reinvigoration of our organization. A web site providing background on the process and unmoderated discussion forums has been launched (<http://www.asme.org/change>). You are invited to participate in this process and provide your input, particularly between now and September 1, through the discussion forums.

Online Resources

- ASME web site: <http://www.asme.org/>
- CIE Division web site: <http://www.asme.org/divisions/cie/>
- ASME member profile update: <https://www.asmeny.org/memberaddr/html/security.htm>
- ASME membership renewal: <https://www.asmeny.org/memberdues/secured/html/security01.htm>
- Subscription to JCISE or other journals: <http://www.asmeny.org/catalog/html/catgperl.htm>
- Electronic submissions to JCISE: <http://jcise.eas.asu.edu:8080/JCISE/>
- On-line access to JCISE articles: <http://www.asme.org/pubs/journals/jcise>

Moving towards an Institute Structure in ASME

The CIE Division is closely following the recent discussions at various levels in the ASME to form an Institute structure. This structure is intended to provide an avenue for greater interaction between members of similar interests across Divisions. For example, the product realization or product development may include efforts from CIE, DETC, FACT, HT, Fluids and other Divisions. An example of this institute structure is the planned efforts towards the formation of an Energy Institute that involves IGTI, Divisions in the Energy Conversion Group and others.

The CIE Division is at the forefront of this change and is closely following with the various volunteers to broaden their role in this mega move. No formal plans have been made on how the structure will be formed for the CIE Division. We urge you to share your views with any member of the Executive Committee (see the list below) so as to provide greater benefits to the CIE community.

ASME Journal of Computing and Information Science in Engineering

The Journal of Computing and Information Science in Engineering (JCISE) is only in its third year of publication. It has published 10 issues so far. JCISE is a multi-disciplinary journal at the junction of Mechanical Engineering and Computer Science. It was created with the specific purpose of providing an avenue for papers in computing and information science related to mechanical product development. It publishes archival research results and advanced technical applications in the areas of computer aided product development, simulation and visualization, and engineering informatics (including AI/Knowledge based systems).

JCISE uses eLANE, a totally paperless on-line service for paper submission, tracking, reviews, and even handling of final manuscripts (see the link in the Online Resources block on page 2). Thanks to the streamlined review process, the average review times are

1.8 months (for the first review cycle) and 1.6 months (for the second cycle).

JCISE is jointly sponsored by ASME and ACM (Association of Computing Machinery). The CIE division is the primary sponsor of the journal, while DED, MED, DCSD are co-operating ASME divisions. The JCISE Editor, with encouragement from CIE, has invited DED to become a co-sponsoring Division. DED is currently evaluating this request.

JCISE has an agreement with ACM to publish the best papers from the ACM Solid Modeling Conference in one issue annually (December). Other special issues are:

March 2003 – Computing technologies for Geometric Dimensioning & Tolerancing (A. Desrochers, C-H Menq, R.Wilhelm – Guest Eds)

March 2004 – CAD for Conceptual Design (I.Horvath, D.Rosen – Guest Eds)

June 2004 – Virtual Reality applications in product development (Oliver, J. Duncan, R.Smith – Guest Eds)

ASME members can get their personal subscription at a highly reduced rate (U.S. \$50/year). Remember to check the box when renewing your membership this year!

Computers and Information in Engineering Division Organization

CIE Division Executive Committee

Chair: Ashwani K. Gupta, University of Maryland College Park, akgupta@eng.umd.edu

Vice-Chair: David E. Lee, Northrop Grumman Space Technology, leed515@asme.org

CIE Conference Executive: Simon Szykman, National Institute of Standards and Technology, szymans@asme.org

Secretary: Plamen Bliznakov, Parametric Technology Corp., plamen@ptc.com

Member: Imre Horvath, Technical University of Delft, i.horvath@io.tudelft.nl

Incoming Member: Chris Paredis, Georgia Institute of Technology, chris.paredis@me.gatech.edu

Past Chair: David W. Rosen, Georgia Institute of Technology, david.rosen@me.gatech.edu

CIE Technical Committees

- Enterprise Information Management (EIM)
- Computer-Aided Product Development (CAPD)
- Internet-aided Design, Manufacturing and Commerce (IADMC)
- Virtual Environments and Systems (VES)
- Embedded and Ubiquitous Computing (EUC)
- Non-Traditional Computing (NTC)
- Energy Systems (ES)
- Computational Technologies and Finite Elements (CTFE)
- Computers in Education (CIEd)

CIE Standing Committees

- Administrative Committee
- Communication Committee
- Finance Committee
- Honors and Awards Committee
- Nominating Committee
- Review Committee

For more information, visit us online at <http://www.asme.org/divisions/cie/>

Conference Calendar

Upcoming Events and Calls for Participation

2003 ASME Design Engineering Technical Conferences and Computers and Information in Engineering Conference

Please join us at the 23rd Computers and Information in Engineering Conference, being held in conjunction with the Design Engineering Technical Conferences on September 2-6, 2003. The local host institution for the conference is the [University of Illinois at Chicago](http://www.uiuc.edu).

The conference will feature some 30 technical sessions including several panel sessions, as well as traditional paper sessions at which approximately 130 papers will be presented. A tutorial on Product Lifecycle Management and Concurrent Product Specification will be held on the opening day of the Conference. The CIE Plenary Keynote talk will be given by Dr. Paul S. Schenker, Director of the Planetary Robotics Laboratory at NASA's Jet Propulsion Lab (JPL).

For a preliminary conference program, as well as for more information about the conference, registration and venue, please, check the conference web site <http://www.asmeconferences.org/idetc2003/>.

CIE Annual Meeting

The Computers and Information in Engineering Division holds an Annual Meeting every year. For logistical reasons, this meeting is typically held on an evening during the annual Computers and Information in Engineering Conference. The conference will be held in Chicago, IL this year (2003) and in Salt Lake City, UT, next year (2004). (See the first and last notes on this page.) Although the Annual Meeting coincides with the CIE Conference, the meeting is not limited to conference attendees. It is open to all ASME members.

Current or prospective CIE Division members are always welcome to attend. Even if you have not registered to attend the conference itself, come and meet the CIE Division Executive Committee and fellow ASME members who have an interest in Computers and Information in Engineering. Local ASME members are also encouraged to attend the CIE Division Annual Meeting. Please, check

the conference program for the exact location and time of the Division meeting.

25th CIE Anniversary Planning

In 2005, both the CIE Division and the CIE Conference will be celebrating their 25th anniversaries. In honor of these occasions, a committee has been established to plan and coordinate activities related to the 25th anniversaries. We will be bringing the lists of papers and authors from the past two and a half decades online, identifying all fellows associated with the CIE Division, locating past chairs of the division and organizing special events to be held during the 25th CIE Conference. If you would like to get involved, please come to the Committee meeting on Wednesday, September 3rd from 7:30 to 8 PM during this year's conference in Chicago or send e-mail to David E. Lee at leed515@asme.org.

2003 International Mechanical Engineering Congress and Exposition

If you would like to get involved with the CIE Division's activities at the annual International Mechanical Engineering Congress and Exposition (IMECE), the Winter Annual Meeting of ASME, please contact Simon Szykman (szykmans@asme.org), this year's Vice-Chair and official CIE representative to IMECE. We have been participating at the congress over the past 2 years, co-sponsoring several sessions with the ASME Fuels and Combustion Technologies (FACT) Division and the Heat Transfer (HT) Divisions. We are always seeking your active participation so as to expand our involvement at the annual Congress. We would welcome your suggestions. Additionally, if you have any feedback about IMECE, please send e-mail to David Lee (leed515@asme.org) as one of the members of ASME's committee that organizes the Congress.

The CIE Division makes diligent efforts to seek out all planned conferences and meetings worldwide that may be of interest to members of the ASME CIE community. In this regard the following conference should be of interest to the CIE community

Tools and Methods of Competitive Engineering - TMCE 2004

The Fifth International Tools and Methods of Competitive Engineering Symposium (TMCE 2004) will be held in Lausanne, Switzerland, from April 13-17, 2004. It offers a high quality professional program as well as a series of

entertaining social functions. The organizers have received more than 150 abstracts and draft papers already, and the submission process is not yet closed. The TMCE 2004 runs in four parallel streams and has an extended poster session. The streams are: Competitive Product Development, Sustainable Design and Manufacturing, Competitive Manufacturing Technologies, and Virtual Enterprise Technologies. There will be 10 keynote speeches. As in the past, 6-8 industrial tutorials and a closing workshop will make the professional program complete. The deadline for full paper submission is end of August 2003. The organizers prefer fully electronic paper submission through the web site of TMCE 2004. Each paper will be reviewed by four international reviewers. In the past, almost 30 percent of the TMCE papers have been republished in leading journals. For further arrangements and submissions please contact: TMCE 2004 Lausanne Secretariat

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2004 ASME Design Engineering Technical Conferences and Computers and Information in Engineering Conference

The 24th Computers and Information in Engineering Conference will be held on September 28-October 3, 2004 in Salt Lake City, UT. A preliminary Call for Papers can be found at: <http://www.asme.org/divisions/cie/events/cie2004/cie2004cfp.html>. Papers are solicited for presentation and discussion in the traditional CIE conference areas:

- [Enterprise Information Management](#)
- [Computer-Aided Product Development](#)
- [Internet-aided Design, Manufacturing and Commerce](#)
- [Virtual Environments and Systems](#)
- [Embedded and Ubiquitous Computing](#)
- [Non-Traditional Computing](#)
- [Energy Systems](#)
- [Computational Technologies and Finite Elements](#)
- [Computers in Education](#)

Suggestions for panel sessions or other special symposia are welcome, and can be sent to the Technical Program Chair for the 2004 conference Plamen Bliznakov (plamen@ptc.com).

The overall web site for the 2004 ASME IDETC/CIE conferences is hosted by the [Brigham Young University](http://www.detc2004.me.byu.edu/) at: <http://www.detc2004.me.byu.edu/>.