



The International Academy for Production Engineering

NEWSLETTER

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From the President

Dear CIRP colleagues

I am most grateful to my colleagues for their good confidence in electing me to this very important appointment for 2011-2012. I shall endeavor my best to uphold the image and excellence of CIRP which has turned 60 years old this year.

Every now and then, I have been looking at a book on my shelf - "Forty Years of CIRP". I am not sure how many colleagues have this book, or have read some parts of it. This is a truly inspiring book, even more so for all the younger colleagues who have joined CIRP during the last one and half decades. Not many of us know how CIRP had come into being and who were its founding and pioneering members. Most of us are aware of the Nicolau's Award, as this is usually given out during the Opening Ceremony of each General Assembly, but little do we know that Général Pierre Nicolau had spent 18 years as the Secretariat of CIRP. The other three forefathers are Bickel, Galloway and O. Peters.



As far back as almost 60 years ago, Nicolau held the vision that production engineering had an important role to play in the future prosperity of industrial nations, and promoted what he called "l'esprit du CIRP", or the spirit of CIRP which is itself a circle of friends and a big family as much as an Academy.

CIRP draws its strengths from the very international nature of its members, and collaboration among members is seen as the most important. It has been specifically highlighted that during General Assemblies, social occasions and informal meetings, members should not spend their time exclusively with their own countrymen, but rather to seek further contacts with members from other countries. Indeed, I would like to urge that not only do we need to renew our existing friendship but also to make new friends, and establish fresh contacts for collaboration.

US President Obama has recently launched the Advanced Manufacturing Partnership (AMP) which is a national effort in bringing together industry, universities and the federal government to address emerging technologies that could help manufacturing industries scale new heights. Here in CIRP, we have had the golden opportunity to draw top expertise from all over the world from both our university colleagues and corporate members. CIRP is a formidable and foremost circle of friends, experts and practitioners, let us work even closer and be the world's premier driving force for manufacturing engineering.

Finally, as the "Forty Years of CIRP" has remained a spiritual source for me, I would like to suggest that we could consider compiling a second volume "CIRP – the next 20 years, 1992 - 2012". This shall provide similar inspiration for the next generation CIRP members.

Looking forward to meeting you in Paris, 2012.

With warm regards,

Andrew Y C Nee, President of CIRP (2011-2012)

News about Members

ERC Advanced Investigator Grant for Professor Brinksmeier

Based on an innovative proposal on the scientific investigation of metalworking fluids (MWF), Professor Ekkard Brinksmeier received an Advanced Investigator Grant from the European Research Council (ERC). Within the next five years Brinksmeier and his staff at the Foundation Institute of Materials science (IWT) Bremen will focus on the working mechanisms of the MWF as well as on new concepts for MWF-supply and -maintenance.

The ERC appreciated the interdisciplinary approach chosen by Brinksmeier, as it is intended to reveal the potential of MWF by close collaboration of engineers and natural scientist. Consequently, the 2.3 Mio€ funding will be used to allow for strengthening the interdisciplinary staff at the IWT Bremen, which already has members from different fields of science (engineers, biologists, physicists).

Since 2007 the European Research Council aims on stimulating scientific excellence in Europe by encouraging competition for funding between the very best, creative researchers of any nationality and age. The Advanced Investigator Grants are the flagship of the 7th Research Framework Programme and are given to exceptional research leaders only.



Prof Dr. –Ing. Matthias Kleiner in the chairmanship of the German Ethic Commission.

The Ethic- Commission “Secure Energy Supply”; 4. April to 28. May 2011, on behalf of the German canceler Dr. Angela Merkel established the basis for the historical political decision to scrap nuclear power in Germany by 2022.

Blitzartiger Atom-Ausstieg

Nach dem Energiegipfel im Kanzleramt hat Angela Merkel angekündigt, das Kabinett werde schon am 6. Juni die erforderlichen Gesetz-entwürfe für den Atomausstieg billigen. Es sei „Eile geboten“, sagte die Bundeskanzlerin



Professor Niels Bay Awarded Doctor Honoris Causa by the Technical University of Lisbon

On June 3rd, 2011, Prof. Niels Bay was awarded the degree of doctor *Honoris Causa* by the Technical University of Lisbon, Portugal.

Prof. Niels Bay is professor at the Mechanical Engineering Department of the Technical University of Denmark, fellow of the International Academy for Production Engineering and was president of the International Cold Forging Group and chairman of the STC-F.



The doctor *Honoris Causa* award pays tribute to the research activities and

contributions to knowledge that were given by Prof. Niels Bay in the fields of metal forming, manufacturing tribology, solid phase welding and resistance welding as well as to Prof. Niels Bay's outstanding qualities as a teacher and supervisor of MSc, PhD and post-doctoral students.

The scientific and technical contributions to knowledge performed by Professor Niels Bay are reported in a long list of highly cited and downloaded international publications. In recognition of his outstanding scientific achievements Prof. Niels Bay was awarded with the 'JSTP International Prize in Precision Forging', which is considered the highest international award in the field of metal forming and technology of plasticity in the world.

The Technical University of Lisbon in awarding Prof. Niels Bay with the degree of doctor *Honoris Causa* also pays tribute to nearly two decades of intense collaboration that helped training researchers, designing courses and consolidating the manufacturing division of Instituto Superior Tecnico (the faculty of engineering of the Technical University of Lisbon).

SME Elects International Body of Distinguished Engineers, Researchers and Educators to 2011 College of Fellows

Among these 2011 Class of 10 SME Fellows two CIRP colleagues:

Changsheng Guo, PhD, FSME is Project Manager at United Technologies Research Center, East Hartford, Conn. where he leads projects in modeling and optimization of manufacturing processes at United Technologies Research Center. His research focus has been on the fundamentals and applications of machining processes including grinding, milling and ceramic machining.



Guo received his PhD in mechanical engineering and his MBA from the University of Massachusetts, a master's degree in manufacturing engineering and a bachelor's degree in mechanical engineering from Northeastern University in China. Before joining UTRC, he was a research fellow and the co-director of the grinding research program at UMass, the technical director of a ceramic machining company and an assistant professor at Northeastern University. His research focus has been on the fundamentals and applications of machining processes including grinding, milling and ceramic machining. Guo has more than 80 published papers and coauthored one book. He has been an SME member since 1993, and is also a member of CIRP and an associate editor for the Journal of Machining Science and Technology. Guo is the recipient of the F.W. Taylor Medal of CIRP and the ASME Blackall Machine Tool and Gage Award.



Jack Jeswiet, PhD, FSME, PE is a Professor of Mechanical Engineering at Queen's University, Kingston, Ontario, Canada

Jack is active in many professional engineering and scientific organizations. At Queen's University he is the chair of undergraduate studies. Jeswiet is a professional engineer in the Province of Ontario, Canada. He is a fellow of Engineers Canada, The Canadian Society of Mechanical Engineers, The Engineering Institute of Canada and The International Academy for Production Engineering (CIRP). Research interests include: sustainable product design (ecodesign); sheet metalforming, including incremental sheet forming; microplastic metalforming; measurement of friction and temperature in metalforming; and powder metallurgy. Jeswiet's recent activities include board of directors of CSME; chair, CIRP Scientific Committee on Forming; vice-chair, CIRP Scientific Committee on Life Cycle/Assembly; and warden of Camp 3 of the Obligation of the Engineer. He became an SME member in 2009.

Dr. Umbrello receives F.W. Taylor medal

The 2011 F.W. Taylor medal has been awarded to Dr. Domenico UMBRELLO At the CIRP G.A. in PISA in 2010, Dr. Umbrello presented his paper in the STC-C paper session. The title of the paper was " A Numerical Model incorporating the Microstructure Alteration for predicting Residual Stresses in Hard Machining of AISI 52100 Steel" (CIRP Annals Vol. 59/1).



Dr Umbrello was born in 1976. Currently he is Assistant Professor at the Department of Mechanical Engineering of the University of Calabria. He has been working in the field of metal cutting since 2001. During these years his scientific activity has been focused on the analysis and simulation of the process mechanics in metal cutting, applying advanced numerical approaches and carrying out effective experiments. He provided several relevant scientific contributions: among them the

enhancement of machining simulation towards the prediction of tool wear and residual stresses. Other relevant accomplishments concern innovative and suitable experimental setups aimed to improve the “*metrology of machining*”, including the measurement of temperature distributions, residual stresses and pressure distribution on the rake face of the tool.

In recent years he started working on the development of innovative rheological laws for machining simulations. Furthermore, he proposed an effective FEM model to investigate micro-structural changes induced by machining processes as well as their influence on surface integrity. The results of such last topics have been published on relevant journals with high impact factors.

Dr. Umbrello has published many papers in scientific journals or in qualified international conference proceedings. He is a co-author of four papers published on the CIRP Annals and presenting author of the CIRP papers published in 2009 and 2010. He also is co-author of the STC-C keynote paper in 2011 focused on *Surface Integrity in Material Removal Processes and Functional Performance of Components*. Presently Dr. Umbrello is Visiting Professor at the Institute for Sustainable Manufacturing of the University of Kentucky in Lexington from March until October 2011

Joaquim Menezes receives General Nicolau Award

The International Academy for Production Engineering has instituted this award to honour Nicolau, founder of CIRP. This Award is conferred in recognition of significant and distinguished scientific and industrial contributions to a specific area within the field of production engineering encompassed by the interests of CIRP. It is the highest distinction awarded by the International Academy for Production Engineering.



Mr. Joaquim Menezes was the President of ISTMA World (International Special Tooling and Machining Association) from 2007 to 2010. ISTMA represents the tool and die industry worldwide and is an international association representing 30 special tooling and machining associations throughout the world. Collectively, ISTMA member associations represent over 8,000 companies and over \$40 billion U.S. dollars in annual sales. ISTMA World is in charge of the central

coordination and organization of all international activities for the whole industry sector. During the past years ISTMA has evolved to a center of knowledge and information exchange for the worldwide special tooling and precision machining industry.

Born in 1946 Mr Menezes has made his professional carrier from scratch. He worked in industry from 1963 and after his studies in electro-mechanical engineering at the Instituto Superior de Engenharia de Lisbon he founded the Iberomoldes-Group in 1975. Later he attended the Advanced Management Course of School for Management and Business in Lisbon and the Owner/President Management Program of the Harvard Business School – USA.

Today Iberomoldes has about 1100 employees and is one of the largest mold engineering groups in the world. It consists of 14 companies in Portugal, Brazil and China with a total annual revenue about 70 M€ It exports over 90% of its production and services to 120 countries. The group activities are product development, rapid prototyping, rapid tooling, design and production of moulds and control gauges as well as the design and production of industrial equipment, parts production and turn key projects.

Customers are World Leaders in Automotive and Consumer applications.

Apart from being President and CEO of Iberomoldes Mr. Menezes also is

- President of the ManuFuture Forum in Portugal
- Chairman of the European Tooling Platform
- President of the Board of Directors of Centimfe (Technological Center for Mouldmaking, Special tooling and Plastic Industries)
- President of the Board of Directors of OPEN (Incubation & Innovation Center Marinha Grande / Portugal)
- Vice President of the Board of POOL_NET / Portuguese Engineering and Tooling Cluster (Marinha Grande / Portugal)
- Member of the EU MANUFUTURE High-Level Group

- Member of the Consultive Board of University of Minho (Guimaraes / Portugal)
- Member of the Consultive Board of Polytechnic Institute of Lisbon (Lisbon / Portugal)



Mr. Menezes has received the National Industrial Merit Commendation from the President of Portugal.

In the years 2009 and 2010 the tool and die making industry was in an severe crisis. Joaquim Menezes navigated the ISTMA through this downturn very successfully. His actions were not only based on a short term planning, but he also considered strategic developments and stimulated research activities to prepare companies for better times to come. It might be stated: that Joaquim Menezes with full commitment, personal enthusiasm and foresight has and is still shaping the future of the tool and die industry. Besides his activities in the tool making industry Joaquim Menezes always was in contact with the scientific community in universities. In research projects his teams worked together with university institutes in Europe and also on global scale.. He has built many bridges between academia and industry. He shares his knowledge with others in interdisciplinary research teams and his contributions have made a real impact. Furthermore, Joaquim Menezes has very pronounced social competences when it comes to motivating teams and managing people in a goal-oriented way. He is the bright example of the contemporary multi-disciplinary production engineer..

The impact of our publications

The ISI Impact factor of our Annals is still going up from 0.0779 in 2007 to 1.684 in 2010. Since 2007 also the Eigenfactor Score and Article Influence are calculated.

Data from 2010 JCR Science Edition

| Year | JCR Data  | | | | | | Eigenfactor™ Metrics  | |
|------|--|---------------|----------------------|-----------------|----------|-----------------|--|--------------------------|
| | Total Cites | Impact Factor | 5-Year Impact Factor | Immediacy Index | Articles | Cited Half-life | Eigenfactor™ Score | Article Influence™ Score |
| 2007 | 2690 | 0.779 | 0.954 | 0.036 | 138 | >10.0 | 0.00445 | 0.283 |
| 2008 | 3771 | 1.123 | 1.514 | 0.094 | 149 | >10.0 | 0.00474 | 0.307 |
| 2009 | 4183 | 1.603 | 1.725 | 0.074 | 136 | >10.0 | 0.00652 | 0.435 |
| 2010 | 4080 | 1.684 | 1.760 | 0.077 | 155 | 9.8 | 0.00721 | 0.515 |

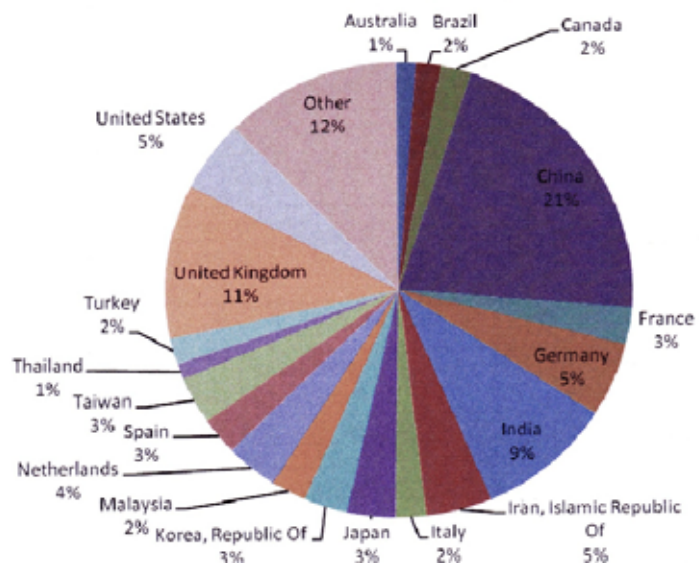
The **Eigenfactor Score** calculation is based on the number of times articles from the journal published in the past five years that have been cited in the JCR year, but it also considers which journals have contributed these citations so that highly cited journals will influence the network more than lesser cited journals. References from one article in a journal to another article from the same journal are removed, so that Eigenfactor Scores are not influenced by journal self-citation.

The **Article Influence Score** determines the average influence of a journal's articles over the first five years after publication. It is calculated by dividing a journal's *Eigenfactor Score* by the number of articles in the journal, normalized as a fraction of all articles in all publications. This measure is roughly analogous to the 5-Year Journal Impact Factor in that it is a ratio of a journal's citation influence to the size of the journal's article contribution over a period of five years.

The mean Article Influence Score is 1.00. A score greater than 1.00 indicates that each article in the journal has above-average influence. A score less than 1.00 indicates that each article in the journal has below-average influence. As shown in the data this number is also going up by more citations in other journals. Citations in the new Journal of Manufacturing Science and Technology (JMST) will improve that number. Also our future conference proceedings via Elsevier Procedia will be of great help.

The number of downloads from our Annals is still growing. It is expected that the downloads will be more than 400.000 for 2011. The geographical spread is shown in the figure.

CIRP Annals Geographical Spread of Downloads, 2011 YTD (June)



Photos of the 61st CIRP General Assembly



On the website of CIRP Hungary http://www.cirp2011.org/downloadable_documents.php you can find all the documents about the last General Assembly including a big collection of photos. Just click the links below and enjoy.

Social Programs:

[Welcome Reception](#), 21 August 2011, InterContinental Budapest Hotel

[Opening Ceremony](#), 22 August 2011, InterContinental Budapest Hotel

[Organ Concert and Civic Reception](#), 22 August 2011, St. Stephen`s Basilica and Duna Palace

[Assembly Dinner](#), 24 August 2011, Railway Museum

[Farewell Dinner](#), 27 August 2011, Museum of Fine Arts

Accompanying Persons Program:

[Sightseeing in Pest](#), 22 August 2011

[Danube Bend tour](#), 23 August 2011

[Sightseeing in Buda](#), 24 August 2011

[Balaton tour](#), 25 August 2011

[Western Hungary-Győr Pannonhalma tour](#), 26 August 2011

Modifications of the Internal Regulations

The following modifications have been approved
by the 61st General Assembly Meeting in Budapest:

Article 24 - Research Affiliates

The objective of the Research Affiliates program is to create, develop, and promote a sustainable, CIRP-related, network of outstanding young researchers in the field of production engineering. Research Affiliates are expected to participate in CIRP-based networks designed to exchange and discuss current research results, create collaborative research projects, and facilitate communication within the CIRP community.

Nomination Criteria:

Candidates should have earned a Ph.D. or should have a minimum of three-years of research experience in academia, national laboratories, or in industry. Candidates may only be nominated by CIRP Fellows. Candidates must have a CIRP Fellow identified as their mentor. Candidates may not be more than 36 years old.

Candidates for Research Affiliates must be nominated by December 1st for the January meetings, or by June 15th for the General Assembly of that year.

The CIRP Council will review all Research Affiliate nominations and select candidates for this program based upon the above criteria. Research Affiliates may hold this title for a maximum of six years, an initial three-year term followed by one renewal term assuming there is satisfactory participation. Research Affiliates must retain a CIRP Fellow as their mentor for the duration of their membership.

CIRP Fellows are allowed to mentor a maximum of three Research Affiliates. CIRP Fellows, upon their retirement, are allowed to mentor their Research Affiliates to the end of the Research Affiliate's current three-year term.

Research Affiliates may register for the CIRP January Meetings and the annual General Assemblies without a specific invitation from a sponsor. Research Affiliates are encouraged to participate in all Track, STC, and CWG meetings of their choice. Research Affiliates may attend any CIRP Conference and submit papers to the CIRP Journal of MST.

Research Affiliates do not pay any annual CIRP membership fee for the first three years, but must pay regular attendance fees to General Assemblies, CIRP related conferences, etc., just as other members. Then, they will pay for the second three-years term.

Research Affiliates will be given access to the CIRP website and receive the annual CIRP Directory.

No Photographs of the video presentations during the meetings.

“Attendants of the meetings are not allowed to take photographs of the presentations’ screens during the meetings” (inserted in the Articles on Paper sessions and STC meetings).

From the secretariat



Chantal Timar-Schubert

Papers/Keynote Papers, CIRP meetings, the Website, candidatures for Membership, Internal Regulations.



Agnès Chelet

Financial aspects in CIRP: fees, page charges, or any kind of payment or invoice.

Important dates:

January meetings

25-27 January 2012, Paris

23-25 January 2013, Paris

General Assembly's

19-25 August 2012, Hong Kong, China

18-24 August 2013, Copenhagen, Denmark

Paris January meetings



The meetings will be back in the entirely refurbished Maison de La Mutualité 25-27 January 2012. Don't forget to register from the CIRP website or [register from here](#).

New Books

Technology, Innovation and Entrepreneurship

by Patri K. Venuvinod

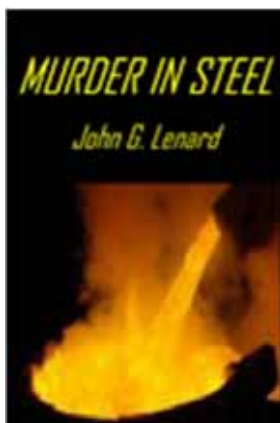


It has become clear in recent times that the key to economic growth is technology (T), that to technology growth is innovation (I), and a powerful contributor to innovation is entrepreneurship (E). Yet there seems to be a paucity of academic books covering the large variety of issues involved in TIE-exploitation in an academic and contemporary manner. This trilogy seeks to remove this hurdle. The aim is to provide a broad understanding of the why and how of TIE interactions while paying due attention to the biases and concerns of the developed as well as the developing parts of the world. Part I focuses on issues of particular importance in nation-building, Part II in enhancing the competitive advantage of individual firms, and Part III in launching a startup. Available both eBook and paperback formats from [Amazon](#) or [Smashwords](#)

My first novel

by John Lenard

I am pleased to announce the publication of my first novel, “Murder in Steel”. While the book is fiction, it was inspired by a real event: in 1973 the Vice Premier of Hungary visited a steel mill and in a terrible accident, fell into the hot steel and died. The question: was this really an accident or political murder, has never been satisfactorily answered. A brief synopsis:



Budapest, Hungary, 2002. Lederer arrives as a tourist in the city where he grew up, and is brutishly arrested. The accusation: that as a young employee at the steel mill in 1956, he caused the agonizing death of a visiting Communist minister by pushing him into the molten steel. Lederer, determined to uncover the mystery behind this allegation, unravels the workings of a conspiracy to avenge the past and re-establish a reign of terror.

John Lenard arrived in Canada in 1957 as a Hungarian refugee, carrying a toothbrush, an extra shirt and memories of both the Holocaust and the ultimate defeat of the 1956 revolution against Soviet domination

After obtaining a doctorate in mechanical engineering, he went on to enjoy a successful career as an educator and researcher. Today, he continues his research in problems of the hot forming of steel. Dr. Lenard is a distinguished Professor Emeritus and an Adjunct Professor in the Department of Mechanical and Mechatronics Engineering at the University of Waterloo and Emeritus Fellow of the CIRP. <http://www.bookstore.uwaterloo.ca/murderinsteel.html>



Our Conferences

| Date | CIRP Conferences | Place |
|---------------------|---|-----------------------|
| 30 Jan - 1 Feb 2012 | 1st CIRP Conference On Surface Integrity (CSI) | Bremen, Germany |
| 18-19 April 2012 | 12th CIRP Conference On Computer Aided Tolerancing | Huddersfield, U.K. |
| 16 May 2012 | 45th CIRP Conference On Manufacturing Systems | Athens, Greece |
| 21-23 May 2012 | 4th CIRP Conf. On Assembly Technology Systems - CATS 2012 | Ann Arbor, USA |
| 23-25 May 2012 | 19th CIRP Conference On Life Cycle Engineering | Berkely USA |
| 4-7 June 2012 | 5th CIRP Conference On High Performance Cutting | Zürich, Switzerland |
| 11-14 June, 2012 | 1st CIRP Global Web Conference On Interdisciplinary Research In Production Engineering | Enschede, Netherlands |
| 18-20 July 2012 | 8th CIRP Conference On Intelligent Computation In Manufacturing Engineering - CIRP ICME '12 | Gulf of Naples |
| 29-30 Oct 2012 | 3rd CIRP Conference On Process Machine Interactions | Nagoya, Japan |
| 8-9 Nov 2012 | 4th CIRP IPS2 Conference | Tokyo, Japan |
| 17-19 April 2013 | 20th CIRP Conference On Life Cycle Engineering | Singapore |
| 13 June 2013 | 14th CIRP Conference On Modelling Of Machining Operations | Torino, Italy |

| Date | CIRP Sponsored Conferences | Place |
|---------------------|--|----------------------|
| 23-24 November 2011 | 1st International Conference On Stone And Concrete Machining | Hannover, Germany |
| 7-8 march 20'12 | 9th International Conference On High Speed Machining | San Sebastian, Spain |
| 12-15 March 2012 | XXIII Conference On Supervising And Diagnostics Of Machining Systems | Karpacz, Poland |
| 17.-18. April 2012 | ICMC 2012/2nd EniPROD Colloquium | Chemnitz, Germany |
| 2-4 May 2012 | PROMED -1st International Conference On Design And Manufacturing PROcesses For Medical Devices | Brescia, Italy |
| 28 May- 1 June 2012 | 1st International Conference On Virtual Machining Process Technology | Montreal, Canada |
| 18-20 June 2012 | RoMaC Conference 2012 - Robust Manufacturing Control | Bremen, Germany |
| 27-29 June | 1st Joint International Symposium On System-integrated Intelligence: New Challenges For Product And Production Engineering | Hannover, Germany |
| 25-27 July 2012 | 3rd International Conference On NanoManufacturing -nanoMan | Wako- Satiama, Japan |
| 8-12 April 2013 | ISEM XVII - 17th International Symposium On Electromachining | Leuven, Belgium |
| 4-7 June 2013 | 7th International Workshop Conference On "Total Quality Management - Advanced And Intelligent Approaches" | Belgrade, Serbia, |