

ICF11 FINAL REPORT

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1. INTRODUCTION

The 11th International Conference on Fracture (ICF11) has represented the first conference of the ICF Series to be entirely managed through Internet, with a massive use of the specific website and exchanging any information by a huge number of e-mails.

Fracture Mechanics may be considered today to be in its most mature age, so that any subject of Strength of Materials is pervaded and enriched by its more peculiar concepts. For this reason, more than a branch of Strength of Materials assumes already Fracture Mechanics the most comprehensive role of the principal discipline. It does not represent any more only a matter for specialists, but it has become a common heritage for all the scientists in Strength of Materials. With all this in mind, ICF11 was planned to cover all the possible subjects, from the most traditional to the most advanced, from the most theoretical to the most practical, touching all the fields of Engineering and the Applied Sciences.

A very large number of well-known specialists was involved in the organisation of Special Sessions and Mini-Symposia, in some cases even competing with one another, but always with the clear intention of attracting the best from our Scientific Community. The central office in Torino (ICF11 Secretariat) gave to all this work a rational configuration, through an impressive Final Programme. On the other hand, the very ample involvement of Colleagues

with personal responsibilities of reviewing the contributions, inviting other Colleagues to participate, organising homogeneous sessions, and, finally, publishing post-conference Special Issues of International Journals or Peer-reviewed Volumes, gave us the feeling that, after our initialisation, a huge and complex self-organised process was under way.

Based on these premises and visions, I believe we can sustain today that ICF11 has been a great success. As a matter of fact, the conference met all our intentions and wishes, with a very high scientific level of the presentations and a very large number of official participants (1041), which presently represents a record for the ICF Series. Such an important result was achieved also due to a relatively low Registration Fee, which permitted us to attract people even from Emerging Countries, although the final budget resulted to be substantially in balance.

For all what the Event represented and expressed, we feel deeply in debt to the present Fracture Mechanics Community, as well as to the past Communities organising the preceding ICF conferences. In the same way, we hope that the next ICF conferences could receive some useful indications and fruitful suggestions from our efforts and experiences.

2. BID DOCUMENT

I assumed the Presidency of the Italian Group of Fracture (IGF) at the National Conference in Trento, in May 1998, for a six years term (with a confirmation every second year). Therefore, to my responsibility was entrusted the presentation of the Italian Candidature for the organisation of ICF11. This Italian Candidature had been already preannounced at ICF9 in Sydney, in April 1997, and should have been officially presented at ICF10 in Honolulu, in December 2001.

At the IGF National Conference in Bari, in July 2000, the IGF Council decided the possible venue of ICF11 to be in Torino and not in Florence, as it was previously considered. In that occasion, Prof. Robert O. Ritchie, ICF10 Chairman, participated to the meeting and was appointed IGF Honorary Member. At the IGF National Conference in Catania, in June 2002, Prof. Yiu-Wing Mai, ICF9 Chairman, and Prof. David Taplin, ICF4 Chairman, received the same Honorary Membership.

The Bid Document to candidate Torino to host ICF11 was prepared by myself, with the precious help of the Convention Bureau, an independent agency sponsored by the local administrations of the City of Torino and of the Region of Piemonte, with the special task to support this kind of international candidatures. The agency had been founded on the occasion of the Bid for the XX Olympic Winter Games of Torino 2006.

Letters of support were addressed from numerous Institutions and Sponsors: the Rector of the Technical University (Politecnico) of Torino, the President of the Academy of Sciences of Torino, the Mayor of the City of Torino, the President of the District (Provincia) of Torino, the President of the Region of Piemonte, the President of the National Research Council of Italy (CNR), the National Government of Italy, Centro Ricerche FIAT, FIAT Engineering, ALENIA Aerospazio, MTS Systems, HILTI, National Association of the Scientific and Technological Parks.

The Bid Document contained also a Tentative Scientific Programme, a Suggested Time-Table, Tentative Registration Fees (which were afterwards maintained in the Euro Currency, and even decreased for Students), and some information on Conference Venue (the Lingotto Conference Centre), Accomodation, Transportation System, etc. In addition, touristic information of Torino, Rome, Florence and Venice were provided. In the last three cities, pre- and post-conference Satellite Workshops were considered, although only the Workshop in Venice was really organised by Prof. Angelo Di Tommaso.

Also the credentials of the Professional Congress Organizer (Centro Congressi Internazionale, CCI) were reported, as well as a draft of the contract between CCI and IGF, and a tentative budget in US Dollars (foreseen expenses grand total = 485,633.45 US Dollars).

The Bid Document was presented to the ICF Council Members about one month before ICF10. The final decision to assign the seat of ICF11 was taken at the ICF Council Meeting of December 2, 2001, in Honolulu. In the competition between Torino and Vienna, Torino could prevail with 24 versus 6 votes, and officially became the seat of the next ICF conference.

3. FIRST ANNOUNCEMENT

The ICF11 First Announcement was printed and sent around in October 2002 (see Appendix...). The conference logo represented a graphical extension of the IGF logo, where the letters are split into different cubes. The dates of ICF11, March 20-25, 2005, were officialised. These represented the Easter Week of the conference year. Also the venue of the conference was formalised, as well as the conference website. After recalling the ICF Executive Officers 2001-2005, and the Previous ICF Conferences, a list of Topics was reported for the Tentative Scientific Programme. This substantially represented a Call for Interest in organising Special Sessions or Mini-Symposia.

Key dates were also provided:

Second Announcement, October 2003;

Deadline for Submission of Manuscripts, April 2004;

Notification of Acceptance and Registration, October 2004.

The International Organising Committee was officially formed by Prof. Yiu-Wing Mai, Prof. Robert O. Ritchie, Prof. Giuseppe Ferro (Secretary), and Prof. Alberto Carpinteri (Chairman).

4. SECOND ANNOUNCEMENT AND CALL FOR PAPERS

The ICF11 Second Announcement and Call for Papers was printed and sent around in October 2003 (see Appendix...).

The conference received the High Patronage of the President of the Republic of Italy, as well as the Auspices of the Ministry of Infrastructures and Transportation of the Italian Government, and of the National Research Council of Italy (CNR), the scientific support and sponsorship of the worldwide leading Institutions in the fields of Fracture, Fatigue, Strength of Materials, and Structural Integrity, like the International Congress on Fracture itself (ICF), the European Structural Integrity Society (ESIS), the American Society for Testing and Materials (ASTM), while the Italian Group of Fracture (IGF), the Politecnico di Torino, and the Academy of Sciences of Torino took the role of host organisations.

Fortyfive (45) Topics were selected to give the conference a complete and appropriate structure. For each Topic, different experts were invited to cooperate in reviewing the submitted contributions, and inviting additional contributions to gather in Special Sessions or Mini-Symposia. In all, the Members of the Scientific Advisory Board were 169.

5. FINAL PROGRAMME

The ICF11 Final Programme was printed in March 2005 and distributed right at the conference (see Appendix..).

The conference was endorsed by a strong Scientific Programme and by the attendance of senior scientists and younger delegates coming from fiftythree (53) different Countries (see the histogram on page 25). Besides the more traditional Topics, the scientific programme covered exciting and new developments, such as scaling laws, nanomechanics, smart materials, biomechanics, geophysics and tectonics, infrastructure durability, damage and restoration of historical and monumental buildings, etc.

Twelve (12) Plenary Lectures were delivered by well-known Speakers during the Opening, the Plenary and the Closing Sessions. Thirtyeight (38) Keynote Lectures were delivered by leading scientists in the field of Fracture to characterise the subjects of the Mini-Symposia, whereas nearly 1100 presentations were scheduled to take place during twohundred and twentyeight (228) Special and Contributed Sessions. The total can be obtained by multiplying the 16 parallel session streams by the 14 working time periods of the conference, and adding 4 further events in the Auditorium. As a matter of fact, the Lingotto Conference Centre , selected to host ICF11, is one of the largest in Europe, offering first-rate services. A total of ineteen (19)

Mini-Symposia and thirtysix (36) Special Sessions wereorganised (see the Final Programme on pages 16-20).

The Local Organising Committee (LOC) was reported on the ICF11 Final Programme (see on page 11). It was formally appointed in the months immediately before the conference, with the aim of finalizing and optimazing the scientific programme, as well as of taking the responsibility of eachone of the sixteen (16) parallel session streams and working rooms. The LOC was composed by nineteen (19) Members.

An updated Time-Table was reported on page 21, where the Concert & Banquet were located on Wednesday evening, March 23, 2005, instead of on Thursday evening, as previously considered. As should be clear from the detailed Time-Table on pages 22 and 23, and in the map of page 24, the sixteen (16) working rooms, besides the Auditorium (or the 500's Room), were represented by sixteen (16) different rainbow colors, whereas the Mini-Symposia (MS), the Special Sessions (SS), and the Contributed Sessions (CS), were indicated by the related Topic, by the order number within the Topic, and by the order number in the single group of sessions.

The details of the Opening, Plenary and Closing Sessions are reported on the pages 29-33. The details of Mini-Symposia, Special Sessions, and Contributed Sessions are reported from page 35 to page 175. In addition to the

Plenary Lectures (Opening or Honour and Closing included) and Keynote Lectures (both of 40 minutes each), only Contributed Lectures of 20 minutes each were considered. An explicit policy of ICF11 was that of excluding Poster Sessions, considered only as an unuseful rite.

The puzzle of creating the Final Scientific Programme (pages 22-23) was not easy at all and implied very subjective and not obvious evaluations. We started with the MSs, following with the SSs, and, finally, with the CSs. It was also not easy to organise the Chairmanships of 228 Sessions.

The Opening Ceremony, after the addresses of the Conference Chairman, Prof. Alberto Carpinteri, of the ICF President, Prof. Yiu-Wing Mai, of the Deputy President of the Academy of Sciences of Torino, Prof. Sigfrido Leschiutta, of the Deputy Minister for Infrastructures and Transportation of the Italian Government, On. Ugo Martinat, contemplated also the presentation of a Doctorate H.C. to the Opening Lecturers, Prof. Benoit B. Mandelbrot and Prof. Grigory I. Barenblatt.

Three official ICF Meetings took place during ICF11 in Torino: a first Executive Committee Meeting on Monday, March 21, 2005, the Council Meeting on Tuesday, March 22, 2005, and a second Executive Committee Meeting on Thursday, March 24, 2005. The related Minutes are reported in Appendix...

6. BOOK OF ABSTRACTS & CD-ROM

A Book of Short Abstracts of 1248 pages was produced, with a CD-ROM containing all the Extended Abstracts (max 6 pages each), and provided to the ICF11 Participants. Different Special Issues of International Journals were produced on the basis of the MS and SS presentations.

A Special Issue of the International Journal of Fracture was published about one year after ICF11 (Volume 138, Nos.1-4, March-April 2006), reporting the principal Official Speeches at ICF11 (see Appendix...) and the content of all the twelve (12) Plenary Lectures. Details also from the presentations of the two Doctorates H.C. to B.B.Mandelbrot and to G.I.Barenblatt were provided, including the two “Laudatio” and the two “Lectio”. From the same Special Issue, also a Hard-Cover Volume was published by Springer-Verlag.

Finally, a Video-Tape was produced of the Opening Ceremony and Honour Lectures (circa 2h 30min).

7. SOCIAL PROGRAMME

A Welcome Reception was organised in the Lingotto Conference Centre on Sunday, March 20, 2005, from 6:00 p.m. to 8:00 p.m. About one half of the Registered Participants took part to the welcoming event.

A Concert followed by a Banquet took place in the Teatro Regio (Royal Theatre), on Wednesday, March 23, 2005, from 8:30 p.m. to 12:00 p.m. About the total of ICF11 Participants was filling the theatre. The Concert was performed by the Soprano Maria Grazia Longo and by the Tenore ... (see Appendix...). The Menù of the Gala Dinner is reported in Appendix...

A Presidential Dinner for the Members of of the ICF Executive Committee and for other relevant Guests was organised at the Ristorante del Cambio, on Thursday, March 24, 2005. The Menù is reported in Appendix...

8. REGISTRATION FEES

The different Registration Fees for ICF11 are reported on page 9 of the Second Announcement (see Appendix...). The Early Registration Fee was fixed at 480.00 Euro, versus 480.00 US Dollars forecast in the Bid Document. It has to be observed that 480.00 US Dollars at the official Currency Exchange Rate (CER) of December 2001 (1.00 US Dollar = 1.10 Euro) were approximately equivalent to 530.00 Euro. On the other hand, 480.00 Euro at the official CER of March 2005 (1.00 Euro = 1.30 US Dollars) were approximately equal to 640.00 US Dollars. From these computations it is rather evident the unlucky trend of the exchange for the Americans, and, in any case, the difficulties we encountered in maintaining our promises. A Fee of 480.00 Euro in March 2005 represented a reasonable compromise. We could not foresee a so large variation in the CER for the next three years. In addition, we have to emphasize that the budget was computed in US Dollars and not in Euro, simply because in December 2001 The Euro was not the official Italian Currency yet. It should have become so in the next month (January 2002).

The official list of the 1041 ICF11 Registered Participants is reported in Appendix...

9. SPONSORSHIP

ICF11 was financially supported by five (5) Main Sponsors:

CEAST (11,886 Euro);
ANAS S.p.A. (10,000 Euro);
MTS Systems (8,478 Euro);
Office of Naval Research (7,821 Euro);
HILTI (5,000 Euro).

In addition, ICF11 was supported by ten (10) Sponsors:

Nescafé (13,475 Euro);
Borini Costruzioni (6,300 Euro);
Autostrade per l'Italia (5,000 Euro);
Rumul (3,000 Euro);
Wiley (3,000 Euro);
Blackwell (3,000 Euro);
Tubosider (2,000 Euro);
Springer (1,592 Euro);
Elsevier (1,170 Euro);
Hysitron-Surface (1,042 Euro).

Finally, also six (6) Contributors contributed to the conference expenses:

Fondazione CRT (10,000 Euro);
ESIS (8,400 Euro);
Politecnico-DISTR (8,000 Euro);
Centro Congressi Internazionale (6,215 Euro);
Città di Torino (2,000 Euro);
Regione Piemonte (1,000 Euro).

10. FINAL BUDGET

The official ICF11 Final Budget is reported in Appendix... The financial support collected from Sponsors and Contributors can be subdivided as follows.

GOVERNMENT: ANAS, Office of Naval Research, Città di Torino, Regione Piemonte, Fondazione CRT.

Partial support = 30,821 Euro.

INDUSTRY: CEAST, HILTI, Borini Costruzioni, Autostrade per l'Italia, Hysitron-Surface, MTS Systems, Rumul, Tubosider, Nescafé, Centro Congressi Internazionale.

Partial support = 62,396 Euro.

ACADEMY: Politecnico-DISTR, ESIS.

Partial support = 16,400 Euro.

PUBLISHERS: Wiley, Blackwell, Springer, Elsevier.

Partial support = 8,762 Euro.

The total sponsorship support amounts to 118,379 Euro, over a total final budget of 508,840 Euro (23.26%).

We can summarize the sectorial supports as follows:
Government 26.03%, Industry 52.71%, Academy 13.85%, Publishers 7.40%.

Air-tickets and accomodation were totally paid and the registration fee totally waived only for six people: Takeo Yokobori (ICF Founder), Y.-W.Mai (ICF President), B.B.Mandelbrot (Honour Lecturer), G.I.Barenblatt (Honour Lecturer), R.O.Ritchie (ICF10 Chairman), D.Taplin (ICF Treasurer). Further support to participants was not considered. A special dinner was offered to the Executive Committee Members and to Special Guests.

11. CONCLUDING REMARKS & ACKNOWLEDGEMENTS

In spite of a relatively low Registration Fee (lower than what was initially supposed in the Bid Document, if we consider the Euro Currency), and although a specific sponsorship for the Banquet was not found (the Banquet was included in the Registration Fee), a positive Budget Balance was achieved. This allowed us to pay ICF 5% of the total Registration Fees received. On the other hand, a low Registration Fee was among the reasons of the ICF11 success.

A final very regretful remark. Italian (and in particular, Turin's) Big Industry, except for some scientific contributions, resulted nearly absent from ICF11. This is difficult to be justified, even if the economical situation has been not particularly fine for Italy in the pre-conference period of time. Only CEAST (producer of testing machines), Borini Costruzioni, Tubosider, and Autostrade per l'Italia (Civil Construction Firms) constituted very welcome exceptions.

On the other hand, globally speaking, ICF11 met all my personal expectations, and for that I feel deeply in debt to ICF, and in particular to the Founder President Prof. Takeo Yokobori, to the President Krishnaswamy Ravi-Chandar, to the Past-President Yiu-Wing Mai, to the Treasurer (and Past-President) David Taplin, and to all the ICF Executive

Officers, who entrusted me and gave me the possibility of organising such an important Event.

I am also very grateful to the Italian Administrative and Scientific Institutions, supporting and organising the Event: Presidenza della Repubblica Italiana, Ministero delle Infrastrutture e dei Trasporti, Consiglio Nazionale delle Ricerche (CNR), Regione Piemonte, Provincia di Torino, Città di Torino, Politecnico di Torino, Accademia delle Scienze di Torino, Gruppo Italiano Frattura (IGF).

My most sincere acknowledgements are also addressed to the worldwide leading Institutions (besides ICF) in our scientific area: the European Structural Integrity Society (ESIS), and the American Society for Testing and Materials (ASTM), scientifically supporting the event.

Very warm thanks are finally due to all the Sponsors and Contributors, without whose financial support ICF11 would not have been realised, as well as to all the actors of the Event: both the International and the Local Organizing Committees, the Scientific Advisory Board, the Organizers of Mini-Symposia and Special Sessions, the Chairpersons of the single Sessions, the Plenary Lecturers, the Keynote Speakers, the Participants and the Authors. A grateful thought is also due to the Technical Staff, who allowed a regular and efficient development of the works.

Alberto Carpinteri
ICF11 Chairman

