

## ICF Awards Committee Report- revised July 23, 2009

The 2005-2009 Awards Committee members consisted of Prof. A. Saxena, USA, Chair; Prof. P. Rama Rao, India; Prof. Emmanuel Gdoutos, Greece; Prof. Shouwen Yu, China, and Dr. Mimoun Elboujdaini, Canada. The committee was charged by the Executive Committee of ICF to make innovative proposals for recognizing people for their excellence in fracture related research. The actions of the committee led to several awards presented at ICF-12 in Canada.

1. With the approval of the ICF Council, Best Paper Awards were established and the awards were presented at ICF12. The quality of the presentation as well as the content was considered in choosing the award winners. A special committee was set up to choose the winners of these awards. This committee performed their work prior to the conference and also during the conference by attending the oral presentations. Seven papers were selected for these awards of which two were to young researchers below the age of 35. The winners in the two categories were:

### Overall Best Paper Awards:

1. Awarded to S. Santucci, M. Grob, R. Toussaint, J. Schmittbuhl, A. Hansen, K.J. Malloy for their paper entitled "Crackling Dynamics During the Failure of Heterogeneous Material: Optical and Acoustical Tracking of Slow Crack Growth"
2. Awarded to T. Sakagami, S. Kubo, H. Kawano, N. Yamaguchi for their paper entitled "Identification of Plastic Zone Based on Inverse Thermal Conduction Analysis and Double Frequency Lock-in Thermographic Temperature Measurement"
3. Awarded to J. L. Evans and A. Saxena for their paper entitled "Elevated Temperature Crack Growth Rate Model for Ni-base Superalloys"
4. Awarded to F. Cazes, A. Simatos, M. Coret, A. Gravouli, A. Combescure for their paper entitled "Energetic Method for the Construction of a Cohesive Law from Nonlocal Elastoplastic Damage Model"
5. Awarded to S. Beretta, M. Carboni, S. Carvello for their paper entitled "Design review of Freight Axle: Achievement of a Million Miles Axle"

### Best Papers by Authors Under the Age of 35:

1. Awarded to F. Barthelat for being the lead-author on the paper entitled "Micromechanics of Fracture in Nacre from Mollusk Shells"
2. Awarded to M. Coulombier for being the lead-author on the paper entitled "Fracture in Thin Free-standing Ductile Metallic Films Characterized Using a Nanomechanical Lab-on-chip Technique"

2. The ICF Honour Lecturers were:
  - a. **Robert O. Ritchie** (UC Berkeley): Fracture of Biological Materials: Bone and Teeth
  - b. **James R. Rice** (Harvard University) : Examples of Fracture Theory in Earth and Environmental Studies
  
3. Three new Gold Medals were established and a competition for awarding the Gold Medals was organized. The description of the awards is given in Appendix A of this report. The winners of this competition listed below were honored at the ICF-12 banquet.
  - a) **ICF George R. Irwin Gold Medal: Prof. Paul C. Paris** for his pioneering contributions in the field of fracture mechanics including formulation of the “Paris-law” for fatigue crack growth rate and its applications for risk analysis and integrity analysis of structural components.
  - b) **ICF Sir Alan H. Cottrell Gold Medal: Prof. Robert O. Ritchie** for his seminal contributions to the mechanistic understanding of fatigue and fracture of metals, ceramics, intermetallics, and biological materials
  - c) **ICF Takeo Yokobori Gold Medal: Prof. D.M.R. Taplin** for his research contributions to the field of creep and fatigue at high temperatures and his vision and sustained leadership of ICF for forty years and his promotion of ICF in establishing it as the premier international organization in the field of fracture
  
4. The Council debated the future of these awards and the numbers of new awardees that could be considered for these awards in the future. It was decided that the awards will be approved by the Executive Committee and in the future could be shared by as many as three scientists. A detail criteria for being a candidate for these awards must be prepared by the new Awards committee.
  
5. The following new scientists were inducted as ICF Honorary fellows at the closing ceremony of ICF-12:
  - a. **Prof. A.J. McEvily** : For his contributions to the understanding of fatigue mechanisms and processes in structural alloys
  - b. **Prof. Alberto Carpinteri** :For his service to ICF in several capacities and his seminal contributions to fatigue and fracture of concrete structures and in structural health monitoring
  - c. **Prof. Ashok Saxena**: For his pioneering contributions to the field of nonlinear fracture mechanics through his work on creep and creep-fatigue crack growth
  - d. **Prof. G. I. Barenblatt** : For his seminal contributions to the development of models for crack tip plasticity and the understanding of brittle fracture
  - e. **Prof. Emmanuel Gdoutos**: For his outstanding contributions in fracture mechanics including fracture under mixed-mode conditions and photoelastic determination of stress fields near crack tips.
  - f. **Prof. Anthony Kelly**: For his pioneering work in the field of strength of composites and the role of crystalline defects in fracture
  - g. **Prof. David Embury**: For his many contributions to the field of ductile fracture in understanding the role of inclusions and the theory of strain localization.
  - h. **Prof. Anthony R. Ingraffea**: For his pioneering contributions to the advanced computational simulation of fatigue and fracture processes leading to improved understanding for practical applications to integrity assessment of engineering structures

- j. **Dr. Mimoun Elboujdaini:** For his outstanding contributions to environment assisted fracture and his leadership in organizing ICF-12.

An updated list of ICF Fellows is attached to the report in Appendix B.

Respectfully submitted,

Ashok Saxena  
Chair, ICF Awards Committee

## Appendix A - Description ICF Gold Medals

The Awards Committee of the International Congress on Fracture (ICF) announces three new awards to be first awarded at ICF-12 in Ottawa, Canada in July 2009. These awards will be presented as ICF Gold Medals and will be named after three distinguished scientists in the field of fracture. A description of the awards and criteria for selection are described:

1. **ICF Takeo Yokobori Gold Medal:** This medal was established by ICF to honor of the vision of Prof. T. Yokobori in organizing the first International Congress on Fracture in 1965 in Sendai, Japan and building its stature as the premier international quadrennial event in the multi-disciplinary field of fracture.

The Yokobori gold medal will be presented at the venue of each quadrennial ICF conference with the first one to be awarded at ICF-12 in Canada. The award will be presented to a senior researcher in recognition of life-time service to ICF through his/her career. In addition to scientific achievements in the field of fracture, the impact of the service provided to ICF shall be a major criterion for selection of the winner.

2. **ICF Sir Alan H. Cottrell Gold Medal:** This medal was established by ICF to honor the many scientific contributions of Sir Allan Cottrell that have been recognized for decades and have led/contributed to the deep fundamental understanding of fracture in structural materials.

The Cottrell gold medal will be presented at each venue of the quadrennial ICF conference with the first one to be awarded at ICF-12 in Canada. This award will be presented to a senior researcher in the field of fracture who through his/her work has made pioneering contributions to the understanding of the phenomenon of fracture.

3. **ICF George Irwin Gold Medal:** This medal was established by ICF to honor the individual who is affectionately known as the “Father of Modern Fracture Mechanics”. His early contributions were critical in establishing the mechanics basis of fracture but were most importantly instrumental in the application of fracture mechanics for integrity assessment of structural components.

The Irwin gold medal will be presented at each venue of the quadrennial ICF conference with the first one to be awarded at ICF-12 in Canada. This award will be presented to a senior researcher whose pioneering contributions have had lasting impact on engineering applications of fracture theories.

## Appendix B- List of ICF Fellows (Limit of 50 Living Fellows)

1.	A.S. Argon	1983
2.	M.F. Ashby	1983
3.	S. N Atluri	1993
4.	B. Averbach*	1977
5.	Leslie Banks-Sills	2005
6.	G.I. Barenblatt	2009
7.	B.A. Bilby	1981
8.	A.J. Carlsson	1983
9.	Alberto Carpinteri	2009
10.	G.P. Cherapnov	1989
11.	A.H. Cottrell	1984
12.	Robert Dodds	2005
13.	M. Elboudjaini	2009
14.	David Embury	2009
15.	Fazel Erdogan	2005
16.	A.G. Evans	1993
17.	D. Francois	1983
18.	E. Gdoutos	2009
19.	W.W. Gerberich	2001
20.	R.V. Goldstein	1993
21.	K.C. Hwang	2001
22.	A.K. Head	1997
23.	J.W. Hutchinson	1989
24.	A. Inghraffa	2009
25.	G.R. Irwin*	1981
26.	T. Kanazawa*	1984
27.	B.L. Karihaloo	2001
28.	T. Kawasaki	1981
29.	A. Kelly	2009
30.	F. Kerkof	1984
31.	Albert Kobayashi	2005
32.	W.G. Knaus	1997
33.	J. F. Knott	1984
34.	A. Kochendorfer*	1977
35.	Brian lawn	2005
36.	H. Liebowitz*	1979
37.	Y.-W. Mai	2001
38.	F.A. McClintock	1989
39.	A. J. McEvily	2009
40.	K.J. Miller*	1997
41.	J. Nemeč	1984
42.	R.W. Nichols*	1977
43.	P.C. Paris	1989
44.	V.V. Panasyuk	1993
45.	A. Pineau	1993

46. Y. Rabatnov	1984
47. K. Ravi-Chandar	2001
48. J.R. Rice	1981
49. R.O. Ritchie	1989
50. K.S. Salama	1993
51. J. L. Swedlow*	1989
52. G.C. Sih	1979
53. A. Saxena	2009
54. D.M.R. Taplin	1977
55. S.R. Valluri	1984
56. A.A. Wells	1989
57. Gordon Williams	2005
58. M.L. Williams	1989
59. T. Yokobori	1977
60. Shouwen Yu	2005
61. Zheng Zhimin	1984
62. S.N. Zhurkov*	1986

\*Deceased

Number deceased = 9; living =52

Note: An exception was made at the ICF Council meeting on July 14, 2009 to allow the number of Fellows to increase to 52 (two above the stipulated maximum)