

# STRUCTURAL MECHANICS IN REACTOR TECHNOLOGY

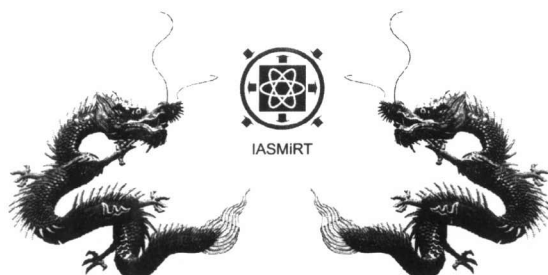


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Yu ZHOU  
Suyuan YU  
Yang XU



Atomic Energy Press



**PROCEEDINGS  
OF 18TH INTERNATIONAL CONFERENCE  
ON STRUCTURAL MECHANICS  
IN REACTOR TECHNOLOGY**



**SMiRT 18**

BEIJING FRIENDSHIP HOTEL

Beijing, China

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## Preface

After traveling alternatively in Europe, America and Asia every other year for more than thirty years, SMiRT Conferences, for the first time, come to China. This great event coincides with a new epoch in Chinese nuclear industry. The significance is far beyond what it appears to be.

While “nuclear” is still associated with catastrophe or hazard, its increasingly important role has been gradually recognized by the public. Fifty years have passed since Eisenhower first put forward the concept of “atomic for peace”. With the passage of time, nuclear industry has been fulfilling its commitment to the blessing of human beings, alleviating energy shortage, offering access to those who are in need. Despite this, its development is not as what the optimists expect. The nuclear industry has experienced the thorny times. The stagnancy, even the decline of the industry, is still fearful. However, as human being has ushered into a new millennium, the concern about the sustainable development of the environment we live in makes us take a more rational look at nuclear energy. It is up to us to tap the potentials of nuclear energy.

The development of nuclear industry owes a lot to the scientists and engineers. Their pursuit of originality and innovation makes them never cease the efforts to create miracles. Their frontier work gives birth to the novel ideas and new concepts which shape the nuclear development in the future.

That is why we are here in China, a country determined to give nuclear energy more shares in the energy mix and await nuclear economy. Based on the seven hundred abstracts submitted from more than forty countries, the conference selected about five hundred full papers from both academic institute and industry. Presentations for these papers will be organized in thirteen Divisions, one hundred and one sessions and two workshops for five days. Besides, three post conference seminars are held in Shanghai, Chengdu and Vienna. SMiRT18 will take this opportunity to offer a forum for free discussion.

The time has presented the opportunities to us. To be or not to be, that is a question, but in taming the shrew, we should have full confidence in ourselves.

As the ancient Silk Road opened a door to the west, SMiRT 18 expects to draw the scientists and engineers worldwide closer. Hope you enjoy your stay in Beijing.

Yours sincerely



Suyuan YU  
President of IASMiRT  
Chairman of SMiRT 18  
August 8, 2005

# **INTERNATIONAL ASSOCIATION FOR STRUCTURAL MECHANICS IN REACTOR TECHNOLOGY (IASMiRT)**

The International Association for Structural Mechanics in Reactor Technology (IASMiRT) was founded in Berlin in 1971 as a registered non-profit international scientific and engineering society. It sponsors biennial international conferences on Structural Mechanics in Reactor Technology (SMiRT) and related post-conference seminars.

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SMiRT 18 is held from August 7 through 12, 2005 in Beijing at the Beijing Friendship Hotel, the People's Republic of China. It follows 17 successful biennial conferences organized in major cities around the world.

The SMiRT conferences bring together scientists and engineers who deal with all aspects of structural mechanics applied to buildings and components in nuclear power plants and facilities.

SMiRT 18 has 13 divisions representing specific areas. It features plenary and keynote lectures, workshops, and about 500 presentations, in which a comprehensive coverage of important topics is involved. All abstracts consist the proceedings and the full-length papers are collected in one CD attached to the proceedings.

Three post-conference seminars are held in Shanghai, Chengdu and Vienna with specific subjects.

### Previous SMiRT Conference

1 <sup>st</sup>	Berlin	1971	Thomas. A. Jaeger
2 <sup>nd</sup>	Berlin	1973	Thomas. A. Jaeger
3 <sup>rd</sup>	London	1975	Howard Gott
4 <sup>th</sup>	San Francisco	1977	Bruno A. Boley
5 <sup>th</sup>	Berlin	1979	Thomas A. Jaeger
6 <sup>th</sup>	Paris	1981	Jean Rastoin
7 <sup>th</sup>	Chicago	1983	Stanley H. Fistedis
8 <sup>th</sup>	Brussels	1985	Sergio Finzi
9 <sup>th</sup>	Lausanne	1987	Folker H. Wittmann
10 <sup>th</sup>	Anaheim	1989	Asadour H. Hadjian
11 <sup>th</sup>	Tokyo	1991	Heki Shibata
12 <sup>th</sup>	Stuttgart	1993	Karl F. Kussmaul
13 <sup>th</sup>	Porto Alegre	1995	Jorge D. Riera
14 <sup>th</sup>	Lyon	1997	Michel Livolant
15 <sup>th</sup>	Seoul	1999	Sung Pil Chang
16 <sup>th</sup>	Washington, DC	2001	Ajaya Kumar Gupta
17 <sup>th</sup>	Prague	2003	Stanislav Vejvoda

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