



The ISAP Reporter

International Society for
Asphalt Pavements

Volume No. 33

December 2007

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ISAP Chairman's Report—Manfred Partl



A Gift from the Past - A Treasure for the Future

Let's face it. Our society would not be what it is now without the great gift that we obtained from a long perished world that was governed by dinosaurs before suffering extinction from an extra-terrestrial impact in an almost apocalyptic manner. This great gift was not shiny like gold but black and sticky, best known as oil in all its petrochemical variations such as bitumen and asphalt.

Now, not an extra-terrestrial but an intra-terrestrial self-made impact is about to hit us. We are facing global climatic changes by producing CO₂ and using oil products, such as bitumen, as if this valuable material would be available "ad infinitum".

It is true, that we have been recycling asphalt roads for many years; but we also know that we have a long way to go to make our roads more sustainable and environmentally friendly with the use of asphalt. There are still new technical, scientific and economic challenges. This road is rocky and full of obstacles because it is often economically rather than environmentally driven and more governed by the short term election period of politicians than the long-term need to establish sustainable life-cycles.

The International Society of Asphalt Pavements ISAP is determined to trigger active contributions by its members on a voluntary basis to meet these environmental challenges and to provide a platform of scientific and technological interchange between scientists, technological experts and professionals.

Following the tremendous interest and great success of the 10th International Conference on Asphalt Pavements 2006 August 12th to 17th in Quebec, our organization has devoted its next intermediate Symposium ISAP2008 August 18th to 20th in Zurich, Switzerland, to the topic *Asphalt Pavement and Environment* (<http://www.empa.ch/isap2008>). The 11th International Conference on Asphalt Pavements ISAP 2010 August 1st to 8th in Nagoya, Japan, will also include this topic.

ISAP is also pleased to welcome experts in a very active Technical Committee TC on *Constitutive Modeling of Asphaltic Materials* composed of seven working groups. This TC regularly organizes open meetings during TRB and workshops, like the 2nd international workshop on *Moisture Induced Damage of Asphalt Mixes* 2007, September 17th to 19th at Texas A & M University in College Station, and the workshop on *Asphalt Recycling and Materials Re-use in Asphalt Pavements* June 28th during the *Varirei 2007* Conference in L'Aquila, Italy. In its recent newsletter to the members in June 2007, ISAP has also launched a call to create further TC's on topics such as *Re-use and sustainability of Asphalt Pavements* and *Construction and Rehabilitation*. This call is still open and interested members are welcome to announce their intention of participation.

ISAP is also attempting to establish further alliances with other organizations, such as RILEM the *International Union of Laboratories and Experts in Construction Materials, Systems and Structures*. It will also improve its links to TRB and further organizations.

All these numerous activities demonstrate that ISAP is successfully transforming from an organization that was primarily organizing the follow up of the famous "Ann Arbor Conferences" to a very active organization determined to contribute the great gift and treasure from the past which can be used and appreciated by future generations.

ISAP Conferences

10th Conference Summary—August 2006

The International Conference on Asphalt Pavements held in Quebec City was the tenth series organized as part of the activities of the International Society for Asphalt Pavements (ISAP). The first conference was held in 1962 in Ann Arbor, MI, USA and other conferences have been held in London, Delft, Nottingham Seattle and Copenhagen.

With nearly 50 years of history. The ISAP conferences have drawn attention to new development in asphalt pavement technologies and the Quebec City conference succeeded in carrying on the tradition of excellence set by previous conferences. The call for Papers attracted 350 abstracts from more than 30 countries. Following the evaluation process, which was managed by the conference's technical committee, 180 papers were selected. Twelve additional papers were requested from authors invited to participate in one of the conferences three plenary sessions. The opening ceremony also included a keynote address given by Reynaldo Roque, a distinguished lecturer selected by the ISAP Board. These scientific contributions were included in the three plenary sessions and 45 parallel sessions held during the conference and most are printed in the conference proceedings.

This collection of 192 papers represents current knowledge and understanding as well as a truly international view of asphalt pavement engineering. This latest contribution from the international scientific and engineering community in the field of asphalt pavements will greatly assist with the worldwide improvement of engineering practices and standards in pavement material as well as in the design, construction and maintenance of asphalt pavement facilities.

The papers were presented in the following sessions:

1 Developments in Asphalt Pavement Materials

- 1.1 Asphalt Mix Design
- 1.2 Low-cost Surfacing Materials
- 1.3 In Situ and Laboratory Characterization and Modeling of Pavement Materials
- 1.5 Improving the Performance of Asphalt Binders
- 1.6 Reuse and Recycling
- 1.7 Utilization of Process Materials and By-products
- 1.8 Foamed Mix
- 1.9 Water Damage in Asphalt
- 1.10 Asphalt Cracking
- 1.11 Asphalt Reinforcement

2 Structural Design for New and Existing Pavements

- 2.1 Development of Long-Lasting Pavements
- 2.2 Validation and Implementation of the 2002 Pavement Design Guide
- 2.4 Pavement-vehicle Interaction
- 2.5 Low-Volume Road Design
- 2.6 Accounting for Frost
- 208 Life-Cycle Cost Analysis

ISAP Conferences, contd

10th Conference Summary, contd

3 Pavement Performance

- 3.1 Long-Term Performance Studies
- 3.2 Full-scale and Accelerated Pavement Testing
- 3.3 Measuring Pavement Performance
- 3.4 Pavement Instrumentation
- 3.5 Modeling Pavement Deterioration
- 5.7 Preventative Maintenance
- 5.8 Pavement Preservation Tools
- 5.9 Sustainable Development

4 Pavement Investigation and Analysis

- 4.1 New Developments in Backcalculation of Pavement Layer Moduli
- 4.2 Innovative Approaches to the Interpretation of Deflection Data
- 4.3 Developments in Non-destructive Pavement Analysis
- 4.4 Pavement Profile Analysis
- 4.5 Collection and Analysis of Distress Data
- 4.6 Characteristics of Safe Pavements
- 4.7 Pavement Noise
- 4.8 Measurement and Analysis of Other Surface Characteristics

5 Highway Operations

- 5.1 Partnership in Pavement Construction and Maintenance
- 5.3 Risk Maintenance in Pavement Construction
- 5.5 Advancement in Construction Techniques
- 5.6 Reduction of User Disturbance
- 5.7 Preventative Maintenance
- 5.8 Pavement Preservation Tools
- 5.9 Sustainable Development

Plenary Sessions

The challenge for researchers will be to use his new knowledge as a basis for further technical developments. The challenge for practitioners will be to implement these new techniques in pavement engineering practices.

Guy Doré, Eng. PhD.,
Chair of the Technical Committee

ISAP Conferences, contd.

2008 Conference “Asphalt Pavements and Environment”

A conference will be held on August 18-20, 2008 in Zurich Switzerland. Dr. Manfred Partl is the contact for the Conference. The topic was chosen in order to show and discuss where asphalt pavements can more actively contribute to an environmentally friendly, sustainable development and a more harmonic, resource preserving way of life where roads will continue to play a major role in fulfilling human mobility needs. The symposium is addressed to students, researchers, practitioners and decision makers who have a need and interest to learn and discuss the state of the art as well as the latest environment-related developments and future ideas in asphalt pavement technology. The symposium intends to provide a platform for international networking, identification of synergies and coordinate research efforts. It will also form the basis for a possible formation of a new ISAP technical committee on the environment. The following topics will be included:

- Low energy asphalt mix production and placing
- Emissions and working safety
- Noise reducing pavements
- Drainage and water susceptibility
- Environmentally sustainable new materials
- Repeated recycling and material resources
- Durability and aging
- Innovative design
- Life cycle analysis
- Roads for energy production
- Roads for environmentally friendly winter maintenance

Contact the following website for more information: www.empa.ch/ISAP2008

2010 Conference – 11th ISAP Conference, Nagoya City Japan

The ISAP 11th Conference planning is underway. It is going to be in August 2010 in Nagoya City Japan with the Japan Road Association (JRA) This is the first ISAP conference to be held in Asia. There is a committee set up and the Chair of the committee is Mr. Nobuhiko Sato.

There will be further information on the conference presented at the ISAP Board meeting in January 2008. There will soon be a link on the ISAP website for further information on the conference.



ISAP Membership News

The ISAP Board of Directors and some members met on January 20, 2007 in Washington D.C. The Board of Directors and Executive Committee listed on the first page of this newsletter were elected. The membership list shows three patron members, one supporting member, 11 student members, 152 members that are both ISAP and AAPT members and 55 Voting members. Nine organizations are corporate members that have various numbers of members depending on their level of corporate membership. There are also three Association members. In 2006 the Association Membership category was established. All members will have the benefits of ISAP membership including membership registration fees for all conferences and symposia. The Association Member will also have an Ex Officio membership on the Board of Directors. The three Associations are; The U.S. National Asphalt Pavement Association, the Japanese Asphalt Pavement Association and the South African Bituminous Association.

Dr. Gerhard Kennepohl presented the ISAP website annual report prepared by he and Rob Lockhart of Rampant Lion Communications. There were about 120,000 hits in 2006. This is up over 102,000 hits in 2005 because of the 10th Conference. The Distinguished Lectures continue to be popular downloads. There have been a total of 45,256 downloads of the Brown lecture and 31,289 of the Haas Lecture. Per Ullidtz' lecture presented at the 9th Conference has been downloaded 38,090 times.

The University of Waterloo has converted all of the Conference Proceedings to CD format. The following CD's have been published and are currently available for purchase. The 7th, 8th and 9th Conference CDs are \$25 for members and \$100 for non-members. The 1st-2nd, 3rd-4th and 5th-6th CDs are \$35 each or \$100 for all three.

9th Conference – Copenhagen

5th and 6th Conf. – Delft & Ann Arbor

8th Conference – Seattle

3rd and 4th Conf. - London & Ann Arbor

7th Conference – Nottingham

1st and 2nd- Ann Arbor

The ISAP Technical Committee is holding an International conference entitled “**Advanced Characterization of Pavement and Soil Engineering Materials**” on June 20-22, 2007 in Athens, Greece. To get more information, go to the Conference website at: www.3dfem.org

The 3rd European Asphalt Technology Association (EATA) Meeting is planned for May 2008 in Lyon, France. EATA is an organization that was established in 2003 with similar aims and structure to the well-established U.S. Association of Asphalt Paving Technologists (AAPT)/ EATA aims to provide a forum on a European scale for regular biennial technical meeting combined with refereed publication of high quality fundamental and applied research on asphalt technology. For further information on the conference and EATA, go to the following website:

<http://heberge.lcpc.fr/eata08/index.html>



Association of Asphalt Paving Technologists (AAPT) Update

The 2007 AAPT Annual Meeting and Technical Sessions were held on March 11-14, 2007 at the Crowne Plaza in San Antonio, Texas. There were 23 papers presented as well as a Government-Industry Forum (titled "Recycling: Opportunities for Reuse and Renewal" and a Symposium (titled "Innovative Construction Practices"). The papers, including discussions, as well as the presentations and pictures from the meeting will be included in the 2007 Journal. The Journal of the 2007 AAPT Annual Meeting and Technical Sessions, Volume 76 is now available. Each AAPT member receives one free copy of the volume. The cost of the volume to others is \$100.00.

The 2008 Annual Meeting is planned for April 27-30, 2008 at the Hyatt Regency at Penn's Landing in Philadelphia, PA. The papers for this meeting were selected at the AAPT Board meeting which was held in Minneapolis on October 16, 2007. The list of papers and other information on the meeting is on the AAPT website (listed below)

Also, AAPT currently has 13 CDs which contain the Journals from 1919-1998. Each CD contains 5 volumes and the cost for members is \$25 and non-members is \$100. Contact the AAPT office or website for further information.

The 2007 AAPT Scholarship winners were:

Eli Fini, University of Illinois at Urbana-Champaign

Pengcheng Fu, University of California- Davis

Enad Mahmoud, Texas A&M University

Elena Romeo, University of Florida

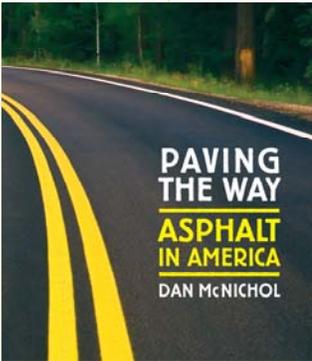
Kamilla Vasconcelos, Texas A&M University

The applications for the 2008 Scholarship are due May 1, 2008 and are on the website.

For further information on AAPT, please visit the website:

www.asphalttechnology.org

National Asphalt Pavement Association News



Roads bind us together. These United States are truly united by ribbons of asphalt that connect not only major cities but every hamlet.

Rivers were America's first major arteries, but their north-to-south routes stalled westward expansion. As the first roadways were built, they were little more than wide paths of dust and mud, and it was obvious that better surfaces were needed.

Cities experimented with various surface materials—bricks, stones, wooden blocks—but they were dirty, noisy, and short-lived. Something was missing, and it turned out to be asphalt.

The first asphalt roads in Europe were paved accidentally. When rock asphalt from Val de Travers, Switzerland, spilled off carts, traffic pounded it into pavements that were far superior to any of the intentionally designed pavements of the time. Later a whole lake of asphalt in South America became the source of the substance that was used for asphaltting the avenues of U.S. cities.

As new sources of the naturally occurring material were discovered and exploited, asphalts from various sources was shipped to the United States in casks or barrels, like fine wines. The importers sang the praises of their proprietary asphalts, extolling the unique virtues of the substances according to where it had been mined.

The practice of refining asphalt from crude oil grew with the use of cars. It was a symbiotic relationship – the oil used for gasoline to power the newly popular autos also contained asphalt that could improve the roads they drove on.

By 1900, cities all across America were providing hard surfaces to carry traffic. But Americans in the heartlands and hinterlands were still mired in mud until a national movement sparked by motoring clubs demanded more paved surfaces. Slowly, roads linking the cities to each other, and connecting farmers to their markets, were graded and paved.

It took two global wars to show that roads were not only important to communication, commerce, vocations, and vacations but were key for defense. Many returning servicemen had used asphalt to create roads and airfields in war-torn Europe, frigid Greenland, and the islands of the Pacific. They founded family businesses that repaired existing roads, then went on to create new superhighways and eventually the extraordinary Interstate System.

As road building evolved, machinery replaced manual labor to pave wider, longer-lasting, quieter, smoother, and safer routes. Asphalt's makeup is constantly tested and enhanced with the latest technology, and at the same time, it has become America's most recycled material, produced in environmentally friendly plants.

With *Paving the Way: Asphalt in America*, Dan McNichol continues his role as the foremost writer on America's roadways. Moving from the earliest arteries to the current engineering marvels, he interweaves his text with absorbing tales of the people who made it all possible. Abundantly illustrated, the story creates an absorbing narrative of the ordinary material that most people hardly notice . . . but we wouldn't be where we are without it.

This book can be purchased from the NAPA website at www.hotmix.org

SABITA NEWS

Publications

The 2006 Edition of Sabita's Flagship Digest publication, which reviews the most notable technological innovations, industry developments, best practices and educational initiatives in South Africa's bituminous products industry, is now available from the Sabita office in Cape Town.

Also available is a revised edition of Manual 22 - "Hot Mix Paving In Adverse Weather"

Further information on Sabita's wide range of manuals, guidelines, codes of practice and audio visual training aids is available on the Sabita website (see below)

Membership Growth

At Sabita's March Annual General Meeting, Chairman Phillip Hechter welcomed four new companies to Sabita's rapidly expanding membership base. Since the beginning of 2006, 13 new companies have joined the Sabita ranks, the latest of which are:

- AG Thomas (Pty) Ltd
- HHA Africa
- Kantey & Templer Consulting Engineers

Tar Spray cc

Sabita Board

At Sabita's March Annual General Meeting, Board members Daniel Mashatola was elected Chairman of the Sabita Board, in place of Mike Zacarias, who has stepped down. Phillip Hechter was re-elected chairman of the Sabita Council. Amendments to the Constitution were approved to expand the membership of the Sabita Council to include representation by all sponsor members, and an equal number of Ordinary Members.

The Sabita Council will now comprise six oil company representatives, six Ordinary Members and two Associate Members.

For further information on Sabita, visit their website at www.sabita.ca.za

6th RILEM International Conference on Pavement Cracking

The preparations for the 6th RILEM International Conference on Pavement Cracking to be held in Chicago, Illinois on June 16-18, 2008 are progressing well. This is the first time that the Conference shall be held in the US. It will be preceded with a workshop on reflective cracking on June 15, 2008.

The conference focuses on the causes, development and maintenance / rehabilitation of pavement cracking, as well as techniques for abating pavement cracking. It will include contributions on theoretical modeling, experimental research and case history studies on cracks in flexible, rigid and composite pavements. All papers will be fully refereed and included in a CD ROM as well as in a proceedings volume.

Topics

- Initiation and propagation of cracks including modeling, calibration, and validation
- Top-down and bottom-up crack mechanisms
- Laboratory testing techniques and evaluation effectiveness
- In-situ experimental studies: field construction and rehabilitation techniques to inhibit pavement cracking
- Performance of crack preventative techniques and pavement service life prediction
- Construction approaches and their relation to crack development
- Crack surveys and nondestructive evaluation
- New design techniques

In addition to RILEM the conference is sponsored by several organizations including FHWA, TRB, and IDOT.

For more information please visit the Conference web site www.ict.uiuc.edu/RILEM

Upcoming Events

13-17 Jan. 2008 - 87th Annual Meeting of Transportation Research Board, Washington, DC, www.trb.org

27 Feb-2 Mar 2008 - NAPA 53rd Annual Convention, AZ Biltmore, www.hotmix.org

9-11 April 2008 - Asphalt Institute Spring Meeting, Washington D.C., www.asphaltinstitute.org

14-15 April 2008 - 3rd European Asphalt Technology Association - EATA Conference, Lyon, France. <http://heberge.lcpc.fr/eata08/>

21-25 April 2008- Transport Research Arena Europe 2008, Ljubljana, Slovenia.
www.traconference.com

28-30 April 2008 - Association of Asphalt Paving Technologists (AAPT) 83rd Annual Meeting, Philadelphia, Pennsylvania, USA www.asphalttechnology.org

11-14 May 2008 - International Conference on Managing Road and Runway Surfaces to Improve Safety, (2nd International Conference on Surface Friction of Road Surfaces) Cheltenham, England, www.saferroads.org.uk

21-23 May 2008- 4th Eurasphalt & Eurobitume Congress, Copenhagen, Denmark.
www.eecongress.org

9-11 June 2008 6th RILEM International Conference on Cracking in Pavements, Chicago, Illinois, USA. www.ict.uiuc.edu/RILEM

20-23 July 2008- 6th International Conference on Road & Airfield Pavement Technology, Sapporo, Japan.

18-20 Aug. 2008 - ISAP International Symposium on Asphalt Pavements & Environment Zurich, Switzerland, www.empa.ch/isap2008

1-3 Oct. 2008 - 3rd International Conference Accelerated Pavement Testing, APT'08, Madrid, Spain. www.cedex.es/apt2008

20-24 Oct. 2008 - 6th Symposium on Pavement Surface Characteristics, SURF 2008.
www.surf2008.si

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