International Society for Asphalt Pavements

The ISAP Reporter

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Table of Contents

ISAP Chairman's Report—John D'Angelo

Transportation and primarily highways are key to maintaining a good economy. It is over our highways that we transport the goods and services that keep the wheels of industry rolling. We are currently living in very troubling economic times. The world economy is in a downturn and many government agencies are cutting back on spending for highways. As highway engineers and road builders this means we have do a better job of using our valuable resources more efficiently and to improve quality and durability of our roads. The International Society for Asphalt Pavements strives to provide forums that provide the information needed to build asphalt roads with longer life and improved life cycle cost.

We are quickly approaching the dates for the 11th International Conference on Asphalt Pavements in Nagoya, Japan. The primary themes for the Nagoya conference will be safety and the environment. In these difficult economic times sustainability and recycling are on every asphalt engineers mind as ways to reduce cost and preserve valuable resources. In Nagoya at the ISAP conference the participants will have the opportunity to exchange the latest ideas on how to optimize our resources.

The technical committee on Asphalt Pavement & Environment held a workshop in China this last summer. This workshop covered asphalt recycling practices throughout the world. Details are covered under a separate article. The technical committee on Constitutive Modeling and Asphalt Materials continues to address advanced tools to designing asphalt pavements and better understand the properties of the asphalt materials we use in these pavements.

ISAP continually strives to provide venues for its members to exchange ideas on the latest issues in asphalt pavement materials, design and construction. We will continue to work at providing the ISAP members with the opportunities share and learn from the best technology from around the world.

ISAP Membership News

ISAP membership includes one supporting member, 7 student members, 128 members that are both ISAP and AAPT members and 74 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. All members will have the benefits of ISAP membership including membership registration fees for all conferences and symposia. An Association Member has 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.

The ISAP Board of Director's Meeting will be held during the AAPT Annual Meeting on Sunday, March 7 at 8:00 AM.

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, 9th and 10th 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.

- 10th Conference—Quebec
- 9th Conference – Copenhagen
- 8th Conference – Seattle
- 7th Conference – Nottingham
- 5th and 6th Conf. – Delft & Ann Arbor
- 3rd and 4th Conf. - London & Ann Arbor
- 1st and 2nd- Ann Arbor

For further information on ISAP, please visit the ISAP website at:

www.asphalt.org

11th ISAP Conference—Nagoya Japan

Noh: classical Japanese musical drama

The upcoming ISAP conference: "The 11th International Conference on Asphalt Pavements" (ISAP NAGOYA 2010) will be held in city of Nagoya, Japan, from August 1 to 6 2010. The continuous events during the conference, including Technical exhibitions, Technical tours, Cultural tours, and Social programs will be the best occasions to obtain the latest technologies and current trend of asphalt pavements and experience the modern and historical sight of Japan.

Technical Sessions

The technical sessions consist of oral and poster presentations, which will be selected from more than 500 abstracts submitted from around the world. Number of abstracts submitted from each region and for each theme are as shown in the tables. High level of presentations are expected.

Paper Themes	Number of Abstracts
1. Environment and Safety	124
2. Structural & Surface Design for Pavements	76
3. Pavement Materials	210
4. Construction Technologies	43
5. Management	54
6. Low-cost Road Construction	14
7. Advanced Applications	11
8. Others	7

Region	Number of abstracts
Asia	308
Europe	120
North America	79
Africa	15
Oceania	11
South America	6
Total	539

Technical Exhibitions

Technical Exhibitions will be held from August 2 to 5 at the conference venue. This exhibition will be a not to be missed chance for the conference attendees to touch the exhibitors' latest achievements, new products and equipment. Of course for exhibitors also, it will provide excellent opportunities to develop relationships with technical experts and researchers for asphalt pavements who will visit ISAP NAGOYA 2010 from around the world. The detailed announcement about the exhibition will be issued on the conference website soon.

At the conference venue, a domestic construction exhibition, open to public, also will be held from Aug 1 to 3.

Tours

The technical tours will show some large-scale highway and arterial road construction projects, which are ongoing around the Nagoya area. One of the tours, will visit the field test site of the New-Tomei Expressway Leading-Edge Project. This is an ongoing project of world-leading, advanced expressway systems on a highway which will be the new arterial highway between Tokyo and Nagoya.

You will experience a compilation of the cutting-edge technologies focusing on environment and safety concerns, i.e., High-Performance Pavement, Automated platooning of commercial vehicles system and ITS (Intelligent Transport Systems) Services for accurate travel time prediction. Also a visit to some other technical interesting locations, like the

TOYOTA Automobile Museum, are also being planned.

For Accompanying Persons Tours and Post-Conference Tours, You will experience unforgettable cultural experiences. A variety of tours are waiting for your attendance.

11th ISAP Conference—Nagoya Japan (contd)

Conference Registration

The conference registration will begin on January 2010. The detailed information about conference registration will be shown on the conference official website at the time.

For further information about the conference, please visit the conference official website at www.isap-nagoya2010.jp or write to us at info@isap-nagoya2010.jp

Introduction of Nagoya

Nagoya is located at the center of the main island of Japan, which has a long history dating to 1900 years ago. After the establishment of Nagoya Castle, a symbol of Nagoya about 400 years ago, the infrastructure of Nagoya as a castle city was organized and many kinds of cultures, including Noh, Kyogen and Tea ceremony, blossomed.

Industrial technologies of Japan have been accumulated from the 19th to the 20th century in Nagoya area with the development of manufacturing industries like automobiles, aviation and machine tools, which developed based on traditional manufacturing passed on from the past to present-day in the long history. Nagoya has an important role in Japan's current industrial society.

Please visit http://www.ncvb.or.jp/ for further information about Nagoya.

The roads of the future will provide transportation for people and goods from point to point. These roads will support regional societies and contribute to economic growth by ensuring shorter travel time, less traffic congestion and more support for emergency medical systems (i.e., shorter travel times to medical facilities). New roads will also offer alternate routes when hazards hinder traffic.

To meet these social needs, we are building the New Tomei Expressway to complement the Tomei Expressway and invigorate local regions and enhance lifestyles, as well as to contribute to Japan’s overall development. We will integrate the world-renowned, cutting-edge technology developed in Japan’s automotive, communications, construction and other industries into the building and management of Japanese expressways. Preparations and initial operation are now underway for this project to establish advanced expressway systems. By prioritizing environmental concerns, ensuring safety and comfort, supporting drivers’ diverse lifestyles and implementing efficient road management, NEXCO-Central continues to build expressways that support the sustainable development of the regions in which it operates and foster a more dynamic society.

As one of the tours, visiting the field test site of the New-Tomei Expressway Leading-Edge Project is being planned. This is an ongoing project of world-leading, advanced expressway systems on a highway which will be the new main arterial highways from Tokyo to Nagoya.

You will experience a compilation of the cutting-edge technologies focusing on environment and safety concerns, i.e., High-Performance Pavement, Automated platooning of commercial vehicles system and ITS (Intelligent Transport Systems) Services for accurate travel time prediction

NAPA News

Federal Highway Program Under a 30-day Extension, $8.7b Rescission Implemented

Despite a last ditch effort by Sen. Barbara Boxer (D-Calif.) to extend federal transportation programs for three months and repeal the $8.7 billion rescission, the Senate was unable to come to a consensus. A one-month continuing resolution is providing states highway funding over the next 30 days but at an amount significantly lower than what would be provided by the House-passed 3-month extension. Sen. Barbara Boxer (D-CA) and Jim Inhofe (R-OK) had reached agreement late September 30th to support Rep. Jim Oberstar's (D-MN) proposal for a 3-month extension of the transportation programs and full repeal of the rescission paid for with the Troubles Asset Relief Program (TARP) funds. However, at least three Senators opposed using TARP funds to pay for the offset and the bill was set aside.

In the meantime, FHWA has rescinded $8.7 billion from each state's highway formula account. NAPA's Legislative Committee held a conference call October 2 to discuss the latest developments and provide guidance to NAPA's legislative activities over the next several months.

States Continue Dedicating Stimulus Funds to Pavement Projects

Last week, the Government Accountability Office (GAO) released the third bi-monthly report on the economic stimulus bill's implementation across the country. According to data obtained through Sept.1, states are continuing to dedicate most highway funds for pavement projects. As of September 1, $18 billion of the $26.7 billion of the apportioned highway funds have been obligated for almost 7,000 projects nationwide. $8.7 billion is being used for reconstruction and rehabilitation of deteriorated roads, including $4.1 billion for road resurfacing projects. The report also states that only $1.4 billion has actually been reimbursed nationwide by FHWA which represents 8 percent of the $18 billion obligated. Iowa and Illinois were two states cited for their high rate of reimbursement. The highway portion of the GAO report can be downloaded by clicking here.

Free NCAT Webinar on New HMA Layer Coefficient

The National Center for Asphalt Technology (NCAT) will hold a free webinar on revising the HMA layer structural coefficient for AASHTO pavement design. Dr. David Timm will present the research based on performance of asphalt pavements on the NCAT test track that has led to the recommendation to increase the structural layer coefficient from 0.44 to 0.54. This research was sponsored by the Alabama Department of Transportation, but the findings are potentially applicable to other users of the 1993 AASHTO Pavement Design guide. Using the revised layer coefficient will reduce the required HMA thicknesses for new construction and many rehabilitation projects by 18 percent. To register for the webinar and/or download the full report, visit http://www.ncat.us/.

Open-graded Friction Course Saving Lives in Texas

In Texas, they call it Permeable Friction Course (PFC). But, what most in that area are discovering is that open-graded friction courses (OGFC) can save lives. [Click here] to view the Houston TV news segment that highlights this technology and this human interest story. The five-mile segment of Highway 8 in Northwest Harris County was selected to receive the asphalt upgrade because of its dangerous reputation -- over 100 injury accidents, most in bad weather, over the past two years. The segment explains the technology of open-graded friction pavement but also features a compelling video of a vehicle traveling in the rain on regular pavement and then crossing over onto the OGFC where the rain appears magically to evaporate. The dramatic increase in visibility and the decreased risk of hydroplaning is expected to save many lives. In addition, the new asphalt replaces concrete, adding noise reduction as another benefit to the upgrade.

SABITA Update

Innovative warm mix asphalt trials completed near Durban

South Africa's first warm mix asphalt (WMA) trials, initiated by an interest group under the leadership of Krishna Naidoo of eThekwini Municipality and consultant Tony Lewis, were successfully completed near Durban in November 2008.

The main aim of these trials, carried out over a period of three days, was to confirm that asphalt mixes could be produced and paved at significantly lower temperatures than conventional asphalt, resulting in energy savings through lower fuel consumption, and a decrease in the emission of greenhouse gases.

A detailed visual inspection carried out along 30km of Brackenhill Road in eThekwini showed that severe pavement distress was concentrated on the first 400m of the road. Over the balance of the road, the distress was found to be more isolated. The severely distressed areas were patched to a depth of 200 mm.

Another initiative of eThekwini's Road Rehabilitation Branch was to utilise the reclaimed asphalt (RA) from their roads by stockpiling it at convenient sites for later use in foam bitumen treated cold mixes. The mixes were produced in a specialised cold mixing plant by blending 85% RA and 15% crusher dust together with 2% foamed bitumen and 1% cement. The cold bituminously treated mix was paved and compacted in the same way as hot-mixed asphalt.

To strengthen the existing pavement and to provide a more uniform support for the surfacing trial mixes, a 125 mm layer of the cold in-plant recycled RA was paved over the full length and width of Brackenhill Road.

TRIAL WMA DETAILS

The same grading, eThekwini Municipality's "Mix D", which is close to COLTO "medium" continuous graded asphalt surfacing mix, was used for all the six mixes used in the trials. The opportunity was taken to explore warm asphalt mixes with and without the addition of reclaimed asphalt (RA), and to also include two mixes with high RA contents.

As can be seen in the diagram below, modification of the two "warm' asphalt mixes was achieved by adding 1.5% SASOBIT to the bitumen used in each of these mixes, while in the case of the 30% RA recycled mix, SASOL provided a wax additive "EXP 1655", 2.0% of which was added to the 60/70 pen bitumen used in this mix.

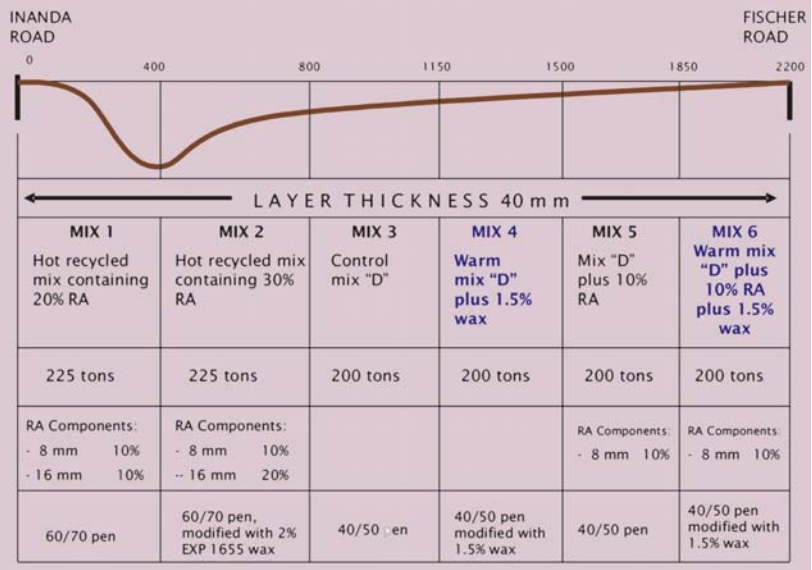
The RA was fractionated into three sizes, with minus 16 mm plus 8 mm fractions being used in the high RA recycled mixes (Mixes 1 and 2), and only the minus 8 mm fraction being used in the two mixes containing 10% RA (Mixes 5 and 6).

Monitoring of a wide variety of parameters such as ambient, bitumen and mix temperatures, as well as burner fuel consumption, was carried out, and samples were taken for the full spectrum of tests, including MMLS testing.

Emission samples were taken at the plant, while fume measurements were taken at the paving site. The density of the paved asphalt was tested as compaction proceeded using a nuclear gauge and the final density checked using both nuclear gauge and core sampling methods.

SABITA Update, contd

Innovative warm mix asphalt trials completed near Durban



MIX 1	MIX 2	MIX 3	MIX 4	MIX 5	MIX 6
Hot recycled mix containing 20% RA	Hot recycled mix containing 30% RA	Control mix "D"	Warm mix "D" plus 1.5% wax	Mix "D" plus 10% RA	Warm mix "D" plus 10% RA plus 1.5% wax
225 tons	225 tons	200 tons	200 tons	200 tons	200 tons
RA Components: - 8 mm 10% - 16 mm 10%	RA Components: - 8 mm 10% - 16 mm 20%			RA Components: - 8 mm 10%	RA Components: - 8 mm 10%
60/70 pen	60/70 pen, modified with 2% EXP 1655 wax	40/50 pen	40/50 pen modified with 1.5% wax	40/50 pen	40/50 pen modified with 1.5% wax

MAIN FINDINGS

In what were probably the first properly monitored warm mix asphalt trials in South Africa, the 125 mm overlay was useful in showing how reclaimed asphalt can be effectively utilised, not only in hot mixes, but also in cold bituminously treated mixes.

It was also found that::

- WMA mixes can be successfully produced at temperatures at least 20°C below those of conventional asphalt;
- Moisture content in the mixes was less than 0.5%;
- The mixes could be compacted to the same degree as conventional asphalt;
- Burner fuel consumption was reduced by between 15% and 20%;

At least 10% RA could be incorporated in WMA.

Pertinent findings regarding the two "High RA" mixes that were manufactured at conventional asphalt mixing temperatures are that:

- At least 20% RA could be incorporated in a mix, by using a higher penetration grade bitumen i.e. 60/70 instead of 40/50.

Full coating was achieved when 30% RA was used in the mix, which was manufactured with 60/70 pen bitumen and a wax additive

The execution of this project provided a good example of how partnerships between clients, contractors, consultants and suppliers can be utilised to successfully introduce new technology, and earned project leaders Naidoo and Lewis the prestigious annual Sabita Award for Outstanding Achievement in Bituminous Product Technology.

Association of Asphalt Paving Technologists (AAPT) Update

AAPT is continuing to work on Strategic Plan that was developed in 2008 by President Stephen Brown. This plan looks at these items:

- Marketing and Membership
- Annual Meeting
- AAPT Journal
- Management and Administration
- International Dimension

Several Task forces have been developed for each item and are currently being implemented. The progress of the Strategic Plan will be communicated to the AAPT members.

The 2009 AAPT Annual Meeting and Technical Sessions were held on March 15-18 at the Marriott City Center in Minneapolis, MN. There were 22 papers presented as well as a Government-Industry Forum and a Symposium (titled "***The Ideal Asphalt Pavement***". The papers, including discussions, as well as the presentations and pictures from the meeting will be included in the 2009 Journal. The Journal of the 2009 AAPT Annual Meeting and Technical Sessions, Volume 78 will be available in December. Each AAPT member receives one free copy of the volume. The cost of the volume to others is $150.00.

The 2010 Annual Meeting is planned for March 7-10, 2010 at the Hyatt Regency at Capitol Plaza in Sacramento, CA. The papers for this meeting were selected at the AAPT Board meeting which was held in Minneapolis on October 27, 2009. The title for the 2010 Symposium is "Polyphosphoric Acid Modification ". There will also be an International Forum which will be in conjunction with ISAP during the AAPT Meeting. The list of papers and other information on the meeting is on the AAPT website (listed below)

Also, AAPT currently has 14 CDs which contain the Journals from 1919-1998. Each CD contains 5 volumes and the cost for members is $50 and non-members is $150. Contact the AAPT office or website for further information.

The 2009 AAPT Scholarship winner was:

- Mary Robbins, Auburn University

The applications for the 2010 Scholarship are due May 1, 2010 and are on the website.

For further information on AAPT, please visit the website:

www.asphalttechnology.org

ISAP TC APE Workshop Qingdao

By Manfred N. Partl, Chairman of ISAP TC APE, Empa, Switzerland

ISAP technical Committee TC APE "Asphalt Pavement and Environment" which was established after the ISAP2008 Symposium in Zurich, organized a RAP workshop in Qingdao, China, August 8th on the topic of material characterization and field validation for predictions of the short- and long-term performance of various types of recycled materials in asphalt pavements. This workshop was held right after the China International Asphalt Material Conference in Qingdao (more than 220 people attended). It attracted more that 80 participants from different mainly Chinese institutions such as state agencies, universities and industries. The twelve speakers from ten different countries covered the following topics

- RAP Management Practices in the U.S.A. (Gerry Huber, Heritage Research, USA)
- Asphalt Pavement Recycling Practices in China Mainland (Jian XU, Res. Inst Highway Ministry of Transport, China)
- Recycling in Japan(Kazuyuki Kubo Public Works Research Institute, Japan)
- 30 Years Experience with Hot Recycling of Asphalt Mixtures in the Netherlands (André A. A. Molenaar, TU Delft, The Netherlands)
- Sustainable Development through Asphalt Recycling in Switzerland (Manfred N. Partl, Empa, Switzerland)
- European survey on the use of RAP (Chantal De La Roche, LCPC, France)
- A Status of Asphalt Recycling in Korea (Namho Kim, Korea Univ. Technol and Education, Korea)
- Crumb Rubber in Asphalt Pavements and Recycling (Xiaohu Lu, Nynas AB, Sweden)
- Research Status and Development of Plant Hot-mix RAP Technologies (Zhang Xiaoning, South China Univ of Technol, China)
- The Effect of Three Asphalt Emulsion Recovery Methods on Recovered Binder Properties (Charles J.Glover, Texas A&M, USA)
- Use of RAP – My Perspective (Charles J.Glover, Texas A&M, USA)
- Hot Mix Asphalt Recycling Experiences in Taiwan (Chui-Te Chiu, Chung Hua Univ, Taiwan)
- France's Perspective on the use of RAP Practice - Research needs and results (Chantal De La Roche, LCPC, France)
- Effects of RAP sizes, Laboratory Mixing Methods on the Performance of Recycled Hot Asphalt Mixture (James Grenfell, NTEC Univ Nottingham, UK)

The pdf-presentations as well as detailed conclusions and an overview on the activities of the TC APE are prepared to be downloaded through the ISAP or the TC APE website soon.

The workshop provided an excellent overview on RAP technology including Asian experience, clearly demonstrating that RAP technology has attracted a lot of interest worldwide given the need for sustainable development. However, there are still significant political reservations as well as quality and performance concerns. Application of RAP for surface courses, mix design, durability (aging characteristics, multiple aging), tests for materials characterization, pollution (CO_2 fume emission), life cycle analysis, repeated re-use of RAP and field performance validation are still major issues to be solved.

Nowadays, the use of RAP in hot mix leads to mixes with best performance. Using RAP in hot mixes appears to be a quite mature technology and is therefore quite extensively used in many countries. It appears generally acknowledged that "dumping" RAP into lower layers is a waste of valuable material and should become „bad practice". This means that we should certainly learn to up-grade RAP to the highest technical and economically feasible level before using it. We should also reduce the diversity of RAP, improve consistency and homogenize as much as possible in order to improve quality and fascilitate logistics

I would like to take this opportunity to thank all speakers and participants for attending. Special thanks to Shin-Che Huang (WRI, USA) for organizing and chairing this event together with my co-chairs Zhang Yuzhen (CSTM, China) and John D'Angelo (ISAP President, USA). TC APE is planning other workshops in 2009 (e.g. Fortalezza Brasil) and will also be active during the ISAP Conference in Nagoya 2010. ISAP members who would like to join the TC APE are certainly welcomed to do so.

News from RILEM TC 206- ATB Advanced Testing and Characterization of Bituminous Materials

Manfred N. Partl, EMPA (Chairman), Emmanuel Chailleux, LCPC (Secretary)

General

The technical committee TC 206 ATB on advanced mechanical testing and characterization of bituminous road materials started its activities in autumn 2004. It relies on more than 50 members from 20 countries who evaluate on a voluntary basis performance and physically based mechanical **test methods** for bituminous binders and mixes as well as procedures for homogeneous and uniform specimen **preparation.** In addition TC 206 ATB evaluates tests and mix design methods for **hot mix recycling** and is also working on interlayer testing and other subjects related to **testing of pavement structures**. Hence, it is divided in 5 task groups:

TG 1 Binders (Dariusz Sybilski)
Evaluate binder properties with respect to durability relevant to distress accumulation by conduction two different round robin tests on binder fatigue with 11 and 12 labs respectively

TG 2 Mixture design and compaction (Hussain Bahia)
Evaluate lab and field compaction methods and models as well as tools other than density to identify micro-structure (X-ray computer tomography CT, gamma ray densometer, etc)

TG 3 Mechanical testing of mixtures (Herve Di Benedetto)
Evaluate existing test methods and models for permanent deformation and rutting of different mixes; having performed interlaboratory tests with different wheel tracking devices (8 labs) and round robin tests with the pneumatic tire wheel tracking device developed by LCPC (7 labs)

TG 4 Pavement performance prediction evaluation (Francesco Canestrari for Herald Piber)
Main topic is the evaluation of test methods to assess interlayer bond. An interlaboratory test has been performed with 11 labs testing 1500 cores from a special test section produced in Italy with three different interlayer treatments.

TG 5 Recycling (Chantal De La Roche)
Evaluate test and mix design methods for the use of bituminous materials from the road, focusing on hot mix recycling (RAP) providing also a close link to ISAP APE WG1. It is conducting an interlaboratory test on aging of mixes (12 Labs).

The TC 206 ATB is determined to accomplish its work in 2010 with different publications and elaborate a proposal for creating a new follow-up TC with a slightly different focus. In 2009, TC 206 ATB with the local organizing committee chaired by Andreas Loizos, has successfully organized the well attended Symposium ATBM09 in Rhodes Rhodes 27-29 May 2009, with a comprehensive 2 volume proceedings. It has also presented its achievements on the RILEM technical day 2009 in Haifa and during the AAPT/ISAP forum 2009 in Minneapolis 17 March, 2009. For more information, see the RILEM web-page www.rilem.net

6TH YEAR OF THE ISAP TECHNICAL COMMITTEE ON CONSTITUTIVE MODELING OF ASPHALTIC MATERIALS

The ISAP TC has its 6th anniversary this year. After the inauguration of the TC in 2003, it has evolved into a mature committee with enthusiastic members with academic as well as industrial backgrounds from over 20 different countries. The TC Co-Chairs are Tom Scarpas from TU Delft, the Netherlands and Andy Collop from the University of Nottingham, UK. The TC consists of the following 5 Working Groups:

WG01 on Foam Asphalt

Coordinator: Andreas Loizos, National Technical Uni of Athens, Greece

WG02 on Water Damage in Asphaltic Mixes

Coordinator: Niki Kringos, TU Delft, The Netherlands

WG03 on Shared Testing Program for Constitutive Modeling

Coordinator: Tom Scarpas, Delft University of Technology, The Netherlands

WG04 on Reinforcement of Asphalt

Coordinator: Imad Al-Qadi, University of Illinois at Urbana-Champaign

WG05 on Chemo-Mechanics of Bituminous Materials

Coordinator: Jack Youtcheff, FHWA, USA

WG06 on Bitumen and Mastics

Coordinator: Hussain Bahia, University of Wisconsin at Madison, USA

The TC is holding its **annual meeting** on the Sunday before TRB. (Tentatively planned for 10 January 2010) During the meeting the coordinators of the WGs give an update on the activities of the past year and the planned events for the coming year. The 2010 meeting will focus on the activities of WG05 Chemo-Mechanics of Bituminous Mixes. Several speakers will be invited to discuss the latest developments on this topic. All ISAP members are invited to attend the meeting. A few of the highlights of the past year are listed in the following:

Members of the **TC** met at Turner-Fairbank Highway Research Center, Washington DC, USA, in January 2009 to discuss the development of an advanced constitutive model and characterization techniques to quantify and explain the healing process in bitumen. Financial contributors to this work are Nynas Bitumen, Shell Global Solutions, Ooms Nederland Holding, the Dutch Ministry of Public Works, the Delft Centre for Materials Research and Delft University of Technology.

In June 2009 **WG06** had a focused 3-days workshop at TU Delft on the topic of Chemo-Mechanics of Bituminous Materials. The Workshop aimed at bringing together international experts in the field of chemistry, physics and mechanics of bituminous materials. The main focus of the event was the bridging of these fields and the development of chemo-mechanical insight into the material. The Proceedings of this Workshop will be made available via the ISAP web-site.

The TC sponsored a new course from the International Course Series on Advanced Constitutive Modeling of Pavement and Soil Engineering Materials. This **short course** was given at Texas A&M University, USA, on 21-25 September 2009 on the topic of Advanced Constitutive Modeling and Characterization of Asphaltic Materials. The course was very well attended and offered a mixture of tensor mechanics, constitutive theories and hand-on sessions in the laboratory.

More information about all these activities can be found on the website of the TC:

http://www.isap-tc-conmod.org

Upcoming Events

2010

10-14 January, 2010 TRB 89th Annual Meeting. Washington D.C.
www.TRB.org/meeting

17-20 January, 2010 NAPA 55th Annual Meeting, Maui, Hawaii
www.hotmix.org

8-12 February 2010 PIARC 2010 Winter Road Congress, Quebec City, Canada
www.aipcrquebec2010.org

15-18 February, 2010 World of Asphalt, Cincinnati, OH
www.worldofasphalt.com

6-9 March 2010 Association of Asphalt Paving Technologists (AAPT) 85th Annual Meeting, Sacramento, California USA
www.asphalttechnology.org

15-16 June , 2010 European Asphalt Technology Association (EATA) Parma, Italy
eataconference.eu

1-6 August 2010 I SAP 11th Conference on Asphalt Pavements, Nagoya, Japan
http://isap-nagoya2010.jp/

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