



**2nd International
Symposium on
Asphalt Pavements
& Environment**
2012 FORTALEZA, BRAZIL



ISAP Technical Committee on
Asphalt Pavements and Environment
ISAP TC APE

October 1st - 3rd, 2012 - Fortaleza, Brazil

<http://www.det.ufc.br/isap2012/>





2nd ISAP APE Symposium Committees

Conference Chairmen: **Manfred Partl** EMPA/KTH SWITZERLAND; **Jorge Soares** UFC, Ceará BRAZIL; **Gabriele Tebaldi** University of Parma ITALY

Steering Committee: **Gordon Airey** University of Nottingham UK; **Kim Jenkins** University of Stellenbosch SOUTH AFRICA; **Peter Sebaaly** University of Nevada USA; **Dariusz Sybilski** Road and Bridge Research Institute - IBDM POLAND; **Gerry Huber** Heritage USA; **John Harvey** University of California - Davis USA; **Jia Yu** Jiangsu Transportation Research Institute CHINA

Local Organizing Committee: **Jorge Soares** UFC, Ceará Brazil; **Verônica Castelo Branco** UFC, Ceará Brazil; **Suely Helena Barroso** UFC, Ceará Brazil; **Sérgio Armando Benvides** UFC, Ceará Brazil; **Marcos Porto** Instituto Federal, Ceará Brazil; **José Abner de Oliveira Filho** DNIT, Ceará Brazil; **Franklin José Chaves** DER, Ceará Brazil; **Tarcísio Chaves** Prefeitura de Fortaleza, Ceará Brazil; **Carlos José Gurgel** Petrobras / Lubnor Brazil; **Carlos Cunha Engevias** Brazil; **Hamilton Santiago** Insttale Brazil



2nd ISAP APE Symposium Topics

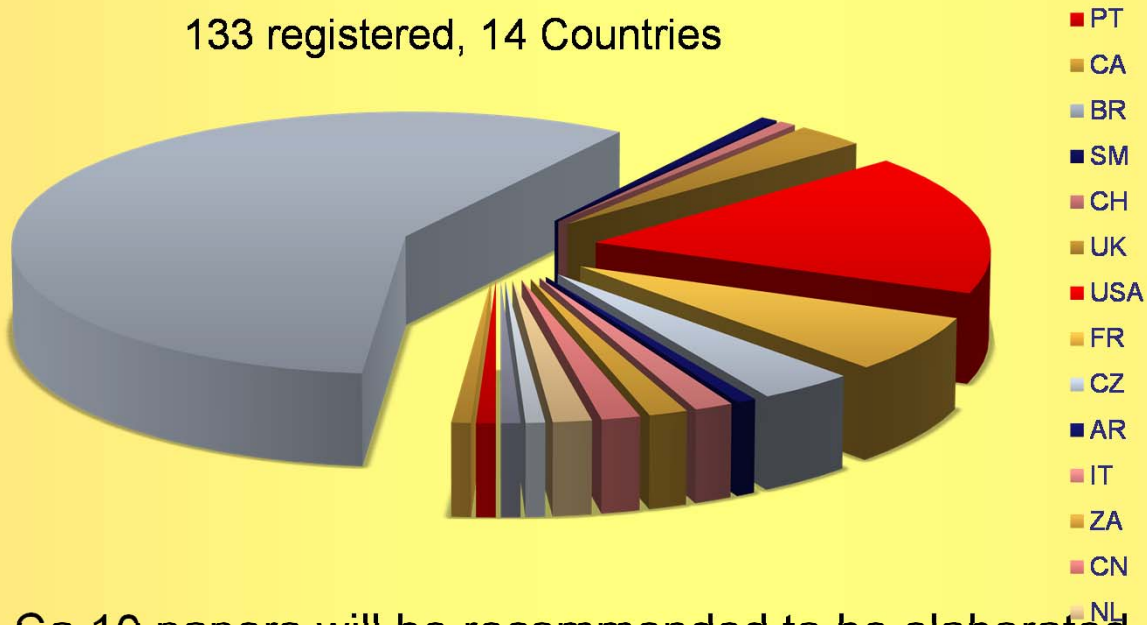
- Key Note: Tony Kriech (Heritage)
Implication of IARC Monograph 103 for the Asphalt Pavement Industry
- Hot, warm & cold recycling of RAP
- New Technologies
- Shingle recycling
- Secondary Materials & By-products
- Bio-asphalt
- Bitumen fumes and health issues
- Energy harvesting



2nd ISAP APE Symposium Feedback

- 69 Papers presented in 8 plenary sessions & 1 poster session

133 registered, 14 Countries



- Ca 10 papers will be recommended to be elaborated and prepared for submission to special issue RMPD

Soares, Partl, Tebaldi, Castelo Branco, Yu, Jenkins, Huber, Lee, Di Benedetto



2nd ISAP APE Symposium Reflection

Selected aspects to think about:

- Complexity requires know how exchange !
- Challenges: patents (secrets), politics (4y view), think global
- Think about long term risks first (health)! Asphalt and cement?
- Food or road?
- Sustainable? ... or even better?
- Understand mechanisms not phenomena !
- Better roads with inferior materials? ... linear landfill!
- Consider material **and** whole pavement system, e.g. interlayer!
- Consider also robustness, e.g. construction under rain and cold!



Papers for thematic issue RMPD

related to APE Symposium held in Fortaleza

- 1) **Implications of IARC Monograph103 for the Asphalt Pavement Industry**
A.J. Kriech, L. V. Osborn
- 2) **An Evaluation of Reclaimed Asphalt Shingles in HMA by Varying Sources and Quantity of RAS**
K. Barry, J. Sias, J. Foxlow, K. Gray
- 3) **Vegetable oil based rejuvenators for cold asphalt recycling**
M. Hugener, M.N. Partl, M. Morant
- 4) **Behavior of asphalt mixtures containing RAP & asphalt shingle**
N. Tapsoba, C. Sauzéat, H. Di Benedetto, H. Baaj, M. Ech
- 5) **Application of aging methods to estimate long term performance of secondary materials for road construction**
S. Akbarnejad, L.J.M. Houben, A.A.A. Molenaar
- 6) **Classification of Recycled Asphalt (RA) Material & Synthesis of Specimen Preparation and Curing Processes for Cold Recycled Asphalt Mixes** *Those two papers will be merged in only one*
G.Tebaldi, E. Dave, P. Marsac, P. Muraya, M. Hugener, M. Pasetto, A. Graziani, A. Grilli, A. Marradi, L. Wendling, V. Gaudefroy, K. Jenkins, A. Loizos, M. Bocci
- 7) **Fundamental Study on Blending Between Reclaimed Asphalt Binder And Virgin Bitumen using Nano-indentation and Nano Computed tomography**
M. Mohajeri, A.A.A. Molenaar, M.F.C. Van de Ven



Papers for thematic issue RMPD

related to APE Symposium held in Fortaleza

- 8) Improvement of Bituminous Foam Mix utilizing Marginal Aggregates with Cement**
R. Abdul Karim, A.R. Dawson, A. Carrera
- 9) New method to obtain viscoelastic properties of bitumen blends from pure and RAP binder constituents**
S. Mangiafico, H. Di Benedetto, C. Sauzeat, F. Olard, S. Pouget
- 10) Characterization of Aging Processes on the Asphalt Mixture Surface**
M.M. Lopes, D. Zhao, D., E. Chailleux, M. Kane, T. Gabet, C. Petiteau
- 11) Structural Analysis and Mechanical Properties of Hot-Mix Asphalt Containing Ashes of Pinus Wood Skin Burned for the Production of Medium Density Fiberboard (MDF)**
J. L. Fernandes, V. S. S. Bardini
- 12) Evaluation of Polishing and Degradation Resistance of Natural Aggregates and Steel Slag Using AIMS**
I. S. Bessa, V.T.F. Castelo Branco, J. B. Soares
- 13) Nanomorphology and Nanorheology of Modified Asphalt Cements by Scanning Force Microscopy**
L. M. Rebelo, P. N. Cavalcante, E. F. da Costa, J. S. de Sousa, E. B. Barros
- 14) Performance of bitumen stabilized materials incorporating reclaimed asphalt pavement**
M. Dal Ben, K.. J. Jenkins



Synergies with RILEM?

<http://www.rilem.net>



- 231-NBM** Nanotechnology-based bituminous materials;
[Birgisson](#), [Poulikakos](#)
- 237-SIB** Testing and characterization of sustainable innovative bituminous materials; *[Partl](#), [Chailleux](#)*
- 241-MCD** Mechanisms of Cracking and Debonding in Asphalt and Composite Pavements. *[Buttlar](#), [Chabot](#)*

e.g. **TC 237- SIB:**

TG 1 Binders (*[Sybilski](#)*)

TG 2 Mixture Design & Compaction (*[Bahia](#)*) ... @ TRB 15th Jan Wardmann #4300
Living Room

TG 3 Mechanical Testing of Mixtures (*[Di Benedetto](#)*)

TG 4 Pavement Multilayer System Testing (*[Canestrari](#)*)

TG 5 Recycling (*[Marsac](#)*) → **ISAP WG1**

TG 6 Cold Recycling (*[Tebaldi](#)*) → **ISAP WG2**



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Thank you

