RESPONSIBLE PACKAGING
FOR
A GLOBAL MARKET

Proceedings of the 19th IAPRI World Conference on Packaging
Melbourne, Australia
15 – 18 June 2014

Editors: M.A. Sek, V. Rouillard and S.W. Bigger

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M.A. Sek, V. Rouillard and S.W. Bigger
Victoria University, Melbourne, Australia

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Cover picture
3D spectrogram showing the evolution of damage in a paperboard container subjected to sustained random loads. The spectrogram is an example of research at Victoria University aimed at developing data analysis techniques for detecting progression of damage through monitoring small changes in the dynamic characteristics (Frequency Response Function) of packaging structures subjected to sustained random loading akin to those experienced during road transport.
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ORGANISING COMMITTEE

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A/Professor Vincent Rouillard, Engineered Packaging and Distribution Research Group, Victoria University
Professor Stephen Bigger, College of Engineering and Science, Victoria University

Committee Members
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Dr Anthony Parker, Engineered Packaging and Distribution Research Group, Victoria University
Dr Marlene Cran, Engineered Packaging and Distribution Research Group, Victoria University
A/Professor Karli Verghese, Program Director, Sustainable Products, RMIT University
Gavin Williams, CEO, Packaging Council of Australia
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PREFACE

The IAPRI conferences and symposia have become an important and prestigious international forum where leading researchers and global experts gather to share their research findings in the field of packaging and distribution. The International Association of Packaging Research Institutes is the global peak body for packaging research and is responsible for fostering packaging research and for promoting packaging as a global science. The IAPRI was established in 1971 and has evolved into a unique global network which allows organisations to exchange research ideas and results, develop new research initiatives and engage in collaborative work. Today the IAPRI consists of 86 member institutes, universities and corporations across 30 countries. The IAPRI conferences are held biennially and are open to general participation, while the IAPRI symposia, held in the years between conferences, are restricted to researchers from member organisations only. Membership of the IAPRI offers a unique access to the packaging research community. Since 2012 the IAPRI offers competitive travel scholarships to foster quality among early career researchers. It is an excellent opportunity for research students from the IAPRI member organisations to gain international experience by being able to working at another member organisation.

This 19th IAPRI World Conference on Packaging 2014 coincides with the 25th anniversary of Victoria University’s involvement in multidisciplinary packaging research initiated in 1989 with the establishment of the Transportation Simulation and Packaging Dynamics Laboratory, and the Packaging Research and Training Centre. Since then the University’s research capabilities in packaging have expanded to include expertise in environmental shock and vibration and distribution dynamics, material characterisation, optimisation of protective packaging, product and fragility analysis, polymer and analytical chemistry, biodegradable polymers, and modified atmosphere antimicrobial active/intelligent food packaging.

This is the second occasion that an IAPRI conference has been hosted by Victoria University. VicUni was the host of the 10th IAPRI Conference in 1997.

Abstracts of submitted papers have been reviewed by the International Scientific Committee to judge their suitability. These proceedings contain 84 full papers as well as 15 abstracts of papers which have been subjected to independent peer review process, and are to be published in Wiley’s Journal of Packaging Technology and Science. All these papers, presented over three days in three parallel and one poster sessions, involved 278 authors and co-authors who are associated with 109 organisations from 25 countries on five continents.

In these Proceedings the papers are placed in submission order and are grouped within nine sections:
1. Active & intelligent packaging
2. Distribution packaging
3. Logistics & supply chain
4. Medical, cosmetics & pharmaceutical packaging
5. Packaging design, ergonomics & human factors
6. Packaging for food & agriculture
7. Packaging materials
8. Packaging printing & graphics
9. Packaging sustainability

On behalf of the Organising Committee we thank all participants for their involvement.

M.A. Sek, V. Rouillard and S.W. Bigger
Chairs, IAPRI-2014 Organising Committee
June 2014