

PROCEEDINGS of

The Sixth International
Composites Conference

ACUN-6

COMPOSITES & NANOCOMPOSITES
in CIVIL, OFFSHORE and MINING INFRASTRUCTURE

14-16 November 2012
Monash University, Melbourne, Australia

Edited by
Yu Bai
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MONASH University



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Proceedings of ACUN-6

The 6th International Composites Conference

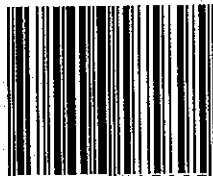
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Editors:

Yu BAI, Sri BANDYOPADHYAY, Xiao-Ling ZHAO, Raman SINGH and Sami RIZKALLA

Dear ACUN-6 Delegates,

To us – the organizers of ACUN-6, it has been an absorbing thrill and exhilarating experience that made all the associated work enjoyable and worthwhile – particularly to learn that a large portion of the world's best and Australia's foremost composites experts are coming to grace the event.

We do extend a very hearty welcome to all our Keynote, Plenary, Invited, Distinguished Contributory, Contributory and Student participants. An event like ACUN-6 cannot happen without active input of many people and that is what the entire proceedings is about.

All the papers included in the conference proceedings were peer-reviewed by experts in the field. A 'regiment' of reviewers have devoted their valuable time to complete their review reports in time and they are gratefully acknowledged in this document.

The Sponsors and Supporters deserve a special mention because they have given us very valuable recognition and encouragement.

ACUN-6 has introduced two Best Paper Awards in the names of the world's premier composites experts/organisations who have illuminated the previous ACUN conferences with their presence.

Thanks are due to Ms. Van Thang for establishing the ACUN-6 website and Ms. Yuzhou Wu for her assistance in preparation of the conference proceedings. On the same token ACUN-6 readily acknowledges the contribution made by Monash University in providing modern facilities including Science Theatres, Catering and Printing Service.

To those who have flown over many seas – trust you will find the venture has been worthwhile, and to all our colleagues from within Australia – it is a great pleasure having you with us again. Wish you all a nice, pleasant and fruitful stay at ACUN-6 in Melbourne, Australia.

Sincerely,

Sri Bandyopadhyay, Xiao-Ling Zhao, Raman Singh, Sami Rizkalla

Yu Bai

14 November 2012

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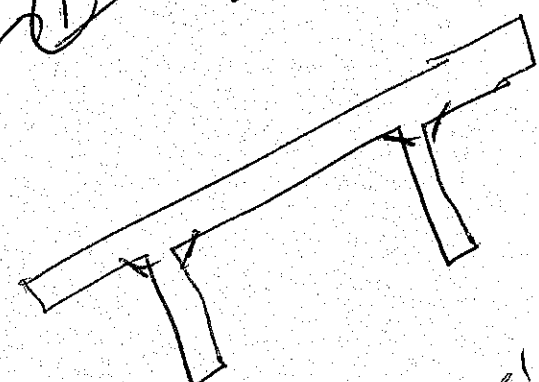
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Use Carbon Fibre in Pre-cast Concrete

① double T in X-rein



Use Carbon Fibre Shear stirrups

② → Wall with panel

in cross section use at 45° to provide shear resist

