

# PLATFORM TECHNOLOGIES NEWS

Quarterly Newsletter of Platform Technologies Research Institute

Issue 5 October 2010

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## FROM THE DIRECTOR'S DESK

Dear Colleagues,

You might be interested to know that recent international rankings listed RMIT at 89th (an increase by eight places) in the areas of Engineering and Technology and I am confident that the next stage of PTRI will contribute to further improvements in rankings at national and international level.

During the past quarter we have had discussion groups and meetings to reflect on our achievements so far and we have started thinking about where we want to be at this time next year. Thank you to everyone who participated in these discussion groups and who attended the PTRI Planning Day as part of the new phase of the Institute. Discussion groups on various new initiatives are continuing, please check the website for further information on the new initiatives and if you are interested in contributing, please contact the relevant team leaders.

One of the new programs we will be launching in 2011 is Applied Logistics, led by Professor Brian Corbitt and Professor Caroline Chan. The aims of the program will be:

- To improve efficiency in logistics flows along supply chain through building platforms to improve information sharing along supply chains and across supply networks.
- To build platforms to improve the efficiency of delivery systems.
- To develop spatially efficient models of supply chain solutions and build platforms to support their effective management.
- To develop applications that support consumer-focused logistics requirements using mobile technology platforms.

In September I visited five universities in China as part of my role as an IEEE Distinguished Lecturer and Guest Professor. I was also invited to perform the five year review of the Digital Ecosystems and Business Intelligence Institute at Curtin University of Technology in Western Australia as an "Expert Visitor". The review included extensive interviews with key stakeholders within and outside Curtin with a final report on the findings and recommendations. Participation in this review will assist in providing a targeted direction for our own Institute.

We are currently establishing a PTRI Advisory Board consisting of industry and peer experts at international and national level. They will provide an added insight into the Institute's new direction and I look forward to introducing them to you at one of our future events.

Please remember to contact me if you wish to share your vision or ideas with me or would like some further information on future projects under development. Look forward to working with you all towards a successful end of the year.

Kind regards,

**Professor Xinghuo Yu**  
Director

### Member awards

Congratulations go to the following members who have been recognised for their contributions to research and industry:

- A paper on *Analyzing Power Network Vulnerability with Maximum Flow Based Centrality Approach* by **Ajendra Dwivedi, Xinghuo Yu, Peter Sokolowski** was given the Best Paper Award in the 8th IEEE International Conference on Industrial Informatics (INDIN 2010) held 13-17 July 2010. This is the flagship IEEE conference in Industrial Informatics. Ajendra (SECE PhD student) presented the paper and received the award.



- **Dr Vipul Bansal** has been recognised in the field of Nano-biotechnology as his biography has been selected to be included in the book "Marquis Who is Who in the World 2011" (28th Edition).
- **Dr Vipul Bansal** has been invited to join the Technical Committee of Annual International Academic Conference on Nanotechnology Software Tools. The other Australian researcher included in the Technical Committee is Dr Amanda Barnard, who is a previous RMIT alumnus and who received the 2009 Prime Minister Prize for Science.

- One of the papers submitted to the Chemeca 2010 Conference by Advanced Materials & Industrial Chemistry Group (AM&ICG) of the School of Applied Sciences has been chosen as the best paper among more than 400 submitted papers. This has resulted in the award of the prestigious John A. Brodie Medal being presented to the authors of this paper which include **Mr Jos Campbell** (PhD student), **Dr Anthony O'Mullane**, **Dr Vipul Bansal** and **Professor Suresh K Bhargava**. The work that was awarded this medal is titled *Templated synthesis of metallic and bimetallic nanoshells with applications in electrocatalysis*. The John A Brodie Medal is awarded by the Institution of Engineers, Australia for the best paper in the discipline of chemical engineering presented at the Chemeca Conference, at any other conference sponsored by the Institution of Engineers, at a Branch meeting of the Institution or published in the journal of Chemical Engineering in Australia during the past year.

- It is also notable that earlier this year, at the ICONN 2010 Conference (International Conference on Nanoscience and Nanotechnology), the best poster award went to the work entitled *Enhanced MRI contrast using DMSA and silica-coated magnetite nanoparticles* by **J. Campbell, J. Lodhia, V. Bansal, S. Cowell, P. Eu, and S. K. Bhargava**. This work was done in collaboration with Peter Eu of the Peter McCallum Cancer Research Institute and Jyoti Lodhia and Simon Cowell of RMIT's School of Medical Sciences.
- **Dr Anthony O'Mullane** has been elected as Secretary of the Electrochemistry division of the RACI.

- PhD Student **Ali Darili** represented RMIT University at the national finals of the Three Minute Thesis competition in August at the University of Queensland in Brisbane. His exposition focused on his research into wireless structural health monitoring in the School of Aerospace, Mechanical and Manufacturing Engineering.
- **Professor Xinghuo Yu** was made a Guest Professor of Wuhan University, Wuhan, China. His role will be to forge collaborative research link in complex systems and networks research.



## Comings and goings

The Center for Satellite Positioning and Navigation (SPAN) led by **Professor Kefei Zhang** recently welcomed Dr Chih-Ching (Alias) Li from National Cheng Kung University of Taiwan who was awarded the Australian 2010 Endeavour Research Fellowship.

Alias holds a PhD in Aeronautics and Astronautics from National Cheng Kung University of Taiwan and has worked as a post-doctoral researcher for five years in the same university. Dr Li will conduct research into the Development of an intelligent, integrated real-time monitoring system for people mobility and object tracking under the supervision of Professor Kefei Zhang in the next six months with RMIT.

Welcome to **Professor Caroline Chan**, who has joined RMIT as Acting Head of School, Business IT & Logistics and joined PTRI through the new PTRI program Applied Logistics.

Another warm welcome to **Ms Dianne Camera**, who has joined PTRI on a part time basis to provide administrative support to the PTRI Executive Committee.

Departures over the last few months included **Dr Wei Peng**, Research Fellow, who accepted a government position and **Associate Professor Zahir Hussain** who returned to Dubai in August – they will be missed in their respective fields of expertise.

## Conferences

SportzEdge staff attended the ISEA2010 in Vienna, Austria from 12 to 16 July 2010. Eight papers were presented, in attendance were **Professor Franz Konstantin Fuss, Professor Aleksandar Subic, Dr Firoz Alam, Dr Olga Troynikov, Ms Clara Cristina Usma-Alvarez** (PhD student), **Mr Julian J.C. Chua** (Master student). Four sessions were chaired: two by Professor Franz Konstantin Fuss, and two by Professor Aleksandar Subic.

**Professor Suresh Bhargava** attended the International Academy of Science, Engineering and Technology International Conference on Nanotechnology: Fundamentals and Applications in Ottawa, Ontario, Canada from August 4 - 6, 2010.

**Professor Suresh Bhargava** also attended the Uranium 2010, 3rd International Conference on Uranium in Saskatoon, Canada from 15-18 August 2010.

**Professor Suresh Bhargava, Dr Vipul Bansal**, 3 Postdoctoral Fellows, and 10 PhD students from Advanced Materials & Industrial Chemistry Group (AM&ICG) of the School of Applied Sciences attended the Chemeca 2010 Conference held in Adelaide during 26-29 September 2010. Professor Bhargava delivered an invited key-note lecture and chaired a session on Minerals Resources while Dr Vipul Bansal delivered a contributory lecture and chaired a session on Bio-nanotechnology during the conference. The conference was a great success and resulted in 8 refereed publications.

**Professor Kefei Zhang** attended (and chaired a session in) the Indoor Positioning & Indoor Navigation (IPIN 2010) held in Zurich in September. He is also a member of the Conference Committee.

**Professor Jinhua Lu** successfully chaired the 2010 International Workshop on Complex Systems and Networks (IWCSN2010) in Beijing. IWCSN2010 focused on complex systems and complex networks, multi-agent systems, systems biology, sensor networks, communication networks, networked control systems, and their applications. A number of well known researchers gave Invited Talks. **Professor Xinghuo Yu** gave an Invited Talk entitled Complex Networks Issues in Smart Grids.

**Professor Xinghuo Yu and Professor Kefei Zhang** delivered Invited Talks at the Federation of Chinese Scholars in Australia (FOCSA) on 7-8 October at the Melbourne Convention Centre. RMIT researchers have also contributed five presentations at the conference. This is the federal alliance in Australia that presents the interests of Chinese scholars and professionals who live and work in Australia. Prominent speakers included ARC CEO Professor Margaret Sheil, Professor Ed Byrne, VC of Monash, Professor Daine Alcorn, DVC RMIT University and several other DVCs from other Australian universities and senior officials from Chinese Embassy and Chinese universities.

**Professor Caroline Chan** has been invited to co-present with Marcel Siera from GS1 Australia on Mobile Phones delivering product data to consumers in The FoodTech Connect Conference and Exhibition from 6-7 October 2010 at the Etihad Stadium, Docklands.

## Platform Technologies Research Institute

### External links and collaborations

There are many examples of external collaborations amongst the various research groups:

#### *Microscopy and Microanalysis Facility*

During August 2010, Senator Kim Carr, Minister for Innovation, Industry, Science and Research launched RMIT's expanded and renovated Microscopy and Microanalysis Facility, which is part of the School of Applied Sciences and is devoted to physics. The facility has been supported through the National Collaborative Research Infrastructure Strategy and the ARC. The facility is a node of the Australian Microscopy and Microanalysis Research Facility – along with universities in New South Wales, Queensland and Western Australia and has valuable relationships with BHP, Bluescope Steel, Southern Tools and other companies.

#### *2010 Telstra Innovation Challenge*

**Professor Franz Fuss'** submission to the 2010 Telstra Innovation Challenge entitled *Wireless Sensor Networks for Post-Surgery Joint Rehab* was shortlisted and he was invited to present his submission to a panel of senior Telstra executives at the Telstra Innovation Challenge Day held on 7 September 2010 in Sydney.

#### *Open Forum Advanced Manufacturing Cooperative Research Centre (AMCRC)*

PTRI hosted an open forum held on 15 September 2010 which was presented by the Advanced Manufacturing Cooperative Research Centre (AMRC) and designed to strengthen the ties between the AMCRC and RMIT University.

The AMCRC is a commonwealth initiative to develop next generation technology platforms and enhance the innovation capabilities in the manufacturing sector. It consists of industry participants (ANCA, VCAMM, MBD Energy, Ausanda, Blade Electrics Vehicles, Third Parties) and research & development providers (CSIRO, RMIT University, Deakin University, Swinburne University of Technology, University of NSW, Monash University, James Cook University).

Presenters include key AMCRC management, in particular, Andrew McLellan, Commercialisation Manager, Dr Gordon Meijs, Research Manager, and Ms Ching Gee, Chief Finance Officer. The AMCRC structure and strategies were introduced. AMCRC programs focus on the following areas and expertise: Use of nanotechnology materials and biological sciences to create high value intellectual property for new products; Development of advanced manufacturing processes with key outputs; Development of intellectual property for control technologies and information systems; Creation of valuable Australian intellectual property in renewable energy/electric vehicles; and Education innovation management training and creation of SME clusters. Interested people are encouraged to contact any of the AMCRC staff regarding possible future projects.

For further information on the AMCRC please visit the website <https://www.amcrc.com.au>

#### *Diamond Tool Manufacture Project*



RMIT University, AMCRC and ANCA Pty Ltd have developed closer links with the recent signing of an agreement to collaborate on the Diamond Tool Manufacture Project funded by the AMCRC. The project, led by **Professor John Mo**, has a total budget of \$6.3m. RMIT will receive \$1.7m in cash income and will contribute an in-kind contribution to the project (staff time) of \$1.8m. RMIT takes a 37% beneficial interest in the project intellectual property.

The primary aim of this project is for ANCA in cooperation with RMIT University to develop a commercially viable Polycrystalline Diamond (PCD) and Polycrystalline Cubic Boron Nitride (PCBN) mass removal technology using the process of Electric Discharge Grinding (EDG). EDG essentially is a process primarily used for the mass removal of hard metals or those materials that would be very difficult to machine, such as PCD/PCBN, using traditional grinding techniques. The new ANCA EDG machine tool will be constructed from the basic architecture of an existing ANCA RX7 grinding machine.

#### *AMCRC Board Meeting*

During September PTIR hosted the AMCRC Board Meeting attended by CRC Board members Dr David Charles, Dr Geoffrey Vaughan, Pat Boland, Brad Dunstan, Professor Graham Davies, Bruce Grey, Ching Gee, Andrew McLellan, Gordon Meijs, Trevor Tappenden, Clive Davenport (CSIRO) and Dr David Lyster from Monash University. RMIT researchers **Professor Liuping Wang**, **Professor John Mo** and **Dr Ian Peake** presented an overview of their team's project which was/is being funded through the AMCRC.

### Grants

RMIT will participate in a new ARC Centre of Excellence for Ultrahigh Bandwidth Devices for Optical Systems. The ARC has awarded a grant worth \$23.8 million over seven years to build a world-leading research centre to create technology that will revolutionise information systems, create and develop Australian industry, and train and mentor young researchers in the science and application of this transformational technology. The Centre is being administered by the University of Sydney and RMIT's involvement will be led by **Professor Arnan Mitchell** from the School of Electrical and Computer Engineering. RMIT's participation in the Centre will involve researchers working with colleagues from the Nonlinear Physics Group at the Australian National University in the field of optical metamaterials and with Monash University and the University of Sydney in ultra-fast photonic signal processing including analogue to digital conversion systems.

**Dr Vipul Bansal**, an APD Fellow and Senior Lecturer from the Advanced Materials & Industrial Chemistry Group (AM&ICG) of the School of Applied Sciences has been awarded an Ian Potter Foundation Grant for the establishment of Advanced Multimode Absorbance, Fluorescence, and Luminescence Plate Reader Facility at RMIT University. The order for the instrument has been placed and it is expected that the facility will be established at Building 3 by early November. Interested users are encouraged to contact Dr Bansal to use this facility.

A project by **Professor Lin Padgham** and Professor Darryn McEvoy entitled *Agent based simulation framework for improved understanding and enhancement of community and organisational resilience to extreme event* received \$80k in funding through the National Climate Change Adaptation Research Facility's (NCCARF) Climate Change Adaptation Research Grants Program.

### Research seminars

PTRI is committed to encouraging collaboration between researchers across RMIT, from national and international institutions and industry. The following seminars were held during the past quarter:

*21 July 2010*

**Associate Professor Ashish Garg** presented a seminar on *Investigations on organic and inorganic electronic materials and devices* with a focus on two material systems: multiferroics for memories and sensors and conducting polymers based organic solar cells.

*13 August 2010*

**Professor Nazim Madhavji** from the Department of Computer Science, University of Western Ontario, Canada presented a seminar on *How do system architectures affect software requirements* which focused on the outcomes of an exploratory controlled study investigating requirements.

*18 September 2010*

**Richard Stallman**, Founder/President, Free Software Foundation presented a seminar on *Copyright vs. community in the age of computer networks*.

*8 October 2010*

**Professor Chengqi Zhang** from University of Technology, Sydney presented a seminar on *Data mining for social security in e-government services* with a focus on how to develop an innovative data mining methodology (activity mining) to reduce incorrect payments by optimising the assessment procedures.

*8 October 2010*

**Professor Elena Lomonova** from Eindhoven University of Technology, The Netherlands, presented a lecture on *Research activities in electromechanics, power electronics and advanced actuation systems* at Eindhoven University of Technology, aimed at providing an overview of the research activities within her group to create opportunities for collaboration between the two Universities.

*15 October 2010*

**Professor Kefei Zhang** hosted a seminar presented by Brett Biddington from Biddington Research Pty Ltd presented on *Australia's role in space: picking up the ball*, in particular on what an Australian national space policy, might, should and must contain.

Unable to attend...? Don't worry. Further information on the presentations is available from the PTRI events website [www.rmit.edu.au/research/institutes/platformtechnologies/news/](http://www.rmit.edu.au/research/institutes/platformtechnologies/news/)

### PLATFORM'S TWO MINUTE INTERVIEW WITH GRAHAME HOLMES



Position: Innovation Professor – Smart Energy  
Area: Power and Energy  
Location: School of Electrical and Computer Engineering

*How long have you been with RMIT?*  
Nearly 4 months now.

*What is your current position at RMIT?*  
Innovation Professor in Smart Energy – my role is to help RMIT support the new “smart energy” paradigm of electrical power generation.

#### Where did you work prior to starting at RMIT?

Monash University for 26 years – teaching and researching in the area of power electronics (the control of electrical energy using semiconductor technologies).

#### Tell us a bit about your research and its past and future implications...

Electrical Energy is an essential service for modern society. However, the technologies of the present day electrical supply system are based primarily on burning fossil fuels, and hence are a major contributor to greenhouse gas emissions. My research work is to help change this old fashioned paradigm, using power electronic conversion technologies to effectively and efficiently manage electrical energy sourced from a variety of energy sources (in particular renewable energy). How important is this? Well, without this change, global warming seems inevitable, and this will be bad for everyone!

#### What challenges do you think are ahead in 2010 and beyond in your specific field?

My immediate challenge is to re-establish bridges between the university and outside companies in the power and energy sector, since these links have unfortunately degraded over the last few decades for a variety of reasons. I see one of my roles to be a conduit, to transfer academic knowledge across to the industry to help them grow, and to bring real world problems back to the university for us to research and investigate.

#### What is important to you in your work?

I have a passion for understanding things deeply, and then “getting it right” when I do something. This perspective is essential for my work – in power electronics, if things are not 100% right, there is usually a cloud of smoke and you start again.

#### What is it in your job that holds your interest?

I like the pursuit of knowledge, the flexibility and diversity of an academic career, and the opportunity to make a contribution to the world. An academic career is really a life choice, not just a job.

#### What is your favourite place in the world and why?

Melbourne of course (well, Mt Eliza where I live actually). It is just a beautiful place to be, but with enough variability to also stay interesting. Otherwise, my second choice is Madison, Wisconsin in the USA.

#### What is the best piece of advice you have received?

Trust in your own judgement, and never give up when you begin something.

#### What is something about yourself that most of your colleagues wouldn't know?

I own a 10m yacht, and sail every weekend during summer.

### PLATFORM'S STUDENT PROFILE FEATURE ERJIANG FU



*Platform Technologies News recently talked to Erjiang (Frank) Fu, PhD student within the School of Mathematical and Geospatial Sciences*

Position: PhD Student within the School of Mathematical and Geospatial Sciences  
Supervisor: Professor Kefei Zhang  
Scholarship: Scholarship awarded by the RMIT Platform Technologies Research Institute

#### Tell us about your project, title and an outline of your research:

The project is titled GPS-based satellite observation technology for atmosphere and climate. This technology utilizes GPS satellites and micro satellites to retrieve the detailed and highly accurate atmospheric information in near real time. Australia especially will benefit from this new space-based technology as it has large unpopulated areas and suffers from extreme weather events and weather-related disasters.

#### What have been your proudest achievements so far?

I have been accepted to present my work at an international workshop held on September 6-11 2010, at the University of Graz Austria. I am also one of three students (only one outside Europe) who have received a student travel award to the value of 1,000EURO. It is one of the most important conferences in my field and it is a great honour to present at the workshop and be awarded the travel fund.

In previous years, I have received two other student paper competitions awards from international conferences, including travel funds:

1. September 2008, Student Paper Competition Award 2,500USD, by Institute of Navigation International Conference, Georgia, USA.
2. January 2008, Best Student Paper Award 300USD, by International Association of Chinese Professionals in GPS 2008 Forum, Guangzhou, China.

I am also a committee member of a number of professional associations, such as Student Chair of the International Association of Chinese Professionals in GPS, and President of Victorian Association of Chinese PhD Students and Young Scholars.

#### Tell us about your educational background:

I graduated with a bachelor's degree in computer engineering in 1998 in China. I received a postgraduate diploma in geographical information science from the University of Auckland in 2005. I moved to Melbourne in 2006 and started my PhD program at the School of Mathematical and Geospatial Sciences RMIT one year later. I also have a graduate certificate in research management and commercialization awarded in 2009.

#### What made you choose RMIT as a place to study?

I was lucky to be offered a part-time research assistant position initially at the school and met with my current PhD supervisor Professor Kefei Zhang. He introduced me to the exciting research projects related to satellite positioning and tracking in SPAN, and encouraged me to apply for a scholarship. I won the scholarship and started my PhD study at RMIT.

#### What are the top three things you like/dislike about living in Melbourne?

I love the work and research environment at RMIT and life style in the central of Melbourne. I enjoy the multicultural food which you can not get in either China or Auckland. Recently I have been discovering the cafés in the suburbs. A few weeks ago, my wife and I found a fantastic place for brunch in Canterbury and it is just beautiful. What I do not like is the winter here with few sunshine days.

The best advice you have ever received would be...? “Get to start writing as early as possible!” Nearly every PhD students completed or at the final stage I met tell me the same thing.

#### Your advice to any student entering your field of study would be.....?

The most important thing you will get out of the PhD program is to learn all the skills needed to become a qualified researcher. The awarded degree is the bonus.

Want to know what PTRI are working on? Here's some project updates:

### *Nano Materials and Devices*

**Professor Salvy Russo**, Dr Manolo Per, Dr Greg Grochola, **Dr George Opletal**, **Dr Peter Zoontjens** have teamed up with Dr Akin Budi from the University of Melbourne on a project on Atomistic Modelling of Nanomaterials and Nanodevices. The aim of this project is to explore the growth mechanisms and predict material properties for nanomaterials of controlled size, shape and composition which have technological applications. The project is funded by the ARC and CSIRO.

### *Space Project Update*

Innovative research on GPS applications for sports and recreational activities has been conducted by SPAN/RMIT University since 2002 currently led by **Professor Kefei Zhang**. RMIT is recognised as a world leader in precise athlete monitoring using miniaturised GPS-based devices, through its strong association with the Australian Institute of Sport, CRC for micro Technology and various federal and state government organisations. There is considerable interest in applying this expertise to the indoor environment for security, sporting, and sales and marketing applications. SPAN is currently engaged in a number of tracking and positioning projects. This includes the DIISR International Science Link (ISL) project (Intelligent gas disaster early-warning, robust emergency response and rescue systems for coal mining based on geospatial information technologies), sport engineering technology for Paralympics, and indoor positioning and navigation using RFID, INS, ultrasonic and GPS etc. The research proposed aligns well with SPAN's expertise and will further extend our capability and cutting-edge research in this area.

RMIT University Events are organising a launch of the Space project on 19 November 2010 with VIPs including Senator Kim Carr, RMIT Vice Chancellor and PVCs. They are also looking to name the Centre, with suggestions including SPACE (Satellite Positioning for Atmosphere, Climate & Environment).

The new Centre will be attracting new staff ranging from project managers, project coordinators to postdoctoral fellows! In addition, renovations are happening to the Centre's laboratories in Bldg 12, Level 10 with new carpet and furniture.

RMIT Marketing selected the Space project as an important aspect of their video production to promote the University, particularly the collaboration with the Bureau of Meteorology, the current research outcomes and their impact on weather forecasting.

### **Future opportunities**

Discussions are being held with NOAA, the Space Agency in Germany and National Space Organisation (Taiwan) on next generation climate meteorology satellite system for another space project for next year.

### **Collaborations**

As mentioned earlier in the newsletter, the team is working with Dr Chih-Ching (Alias) Li from National Cheng Kung University of Taiwan on the development of an intelligent, integrated real-time monitoring system for people mobility and object tracking.

### **Platform in the media!!**

During the last quarter, the following researchers were called upon to express their expert views on current topics:

**Dr Asha Rao**, School of Mathematical and Geospatial Sciences

Topic: Criminal gangs targeting Eftpos machines

Outlet: ABC News (Melbourne), Thursday, 15 July

Also ABC News (Sydney)

ABC News (Darwin)

ABC Lateline

RMIT experts in the media, 02/07/10

- 09/07/10 <http://www.rmit.edu.au/>

[browse;ID=8x8v7yljewed](http://www.rmit.edu.au/browse;ID=8x8v7yljewed)

**Dr Anthony Bedford**, School of Mathematics and Geospatial Sciences  
Topic: Paul the football tipping octopus  
Outlet: MX (Australia), Monday, 12 July

**Professor Kefei Zhang** has been interviewed by the Magazine "Fast Thinking"

**Professor Kefei Zhang** will attend the ARC Roadshow in Canberra on 25 October along with his long-term collaborator – Prof John Le Marshall from The Bureau of Meteorology.

**Professor Kefei Zhang**, School of Mathematical and Geospatial Sciences  
Topic: Space jobs  
Outlet: Weekend Australian, Saturday, 11 September

**Dr Olga Troynikov**, School of Fashion and Textiles  
Topic: Learning to run the business of fashion  
Outlet: The Age, Monday, 13 September

Innovative design a boost for Australian boccia. RMIT University. Feature article on the new ramps for boccia athletes, used in the 2010 Boccia World Championship in Lisbon, Portugal, designed by Professor **Franz Konstantin Fuss** and **Mathew Dickson**, 15 September

**Dr Christopher Cheong**, School of Business IT and Logistics  
Topic: Universities creating iPhone apps  
<http://www.rmit.edu.au/redirect?URL=http%3A%2F%2Fwww.medioclips.rmit.edu.au>  
Outlet: Australian Financial Review, Monday, 20 September Also CME Markets

**Professor Franz Fuss and Dr Michael Burton**, School of Aerospace, Mechanical and Manufacturing Engineering  
Topic: Hi-tech set of wheels gives athletes an edge <http://www.rmit.edu.au/redirect?URL=http%3A%2F%2Fwww.theaustralian.com.au>  
Outlet: The Australian, Tuesday, 21 September

**Professor Kefeizhang** was invited to submit a story for the Thirty Stories for Thirty Years publication of the joint Australia and China Science and Technology Week at the Shanghai World Expo on his team's collaboration with China University of Mining and Technology (CUMT) on an International Science Link project which uses Radio Frequency Identification (RFID) – based multiple sensor geospatial technology to improve mine safety and efficient mining emergency and management services. RMIT's research work was included in the memorial book/DVD of celebration.

**Jeremy Yuille** School of Media and Communication  
Topic: Spida Everitt on Twitter  
Outlet: RRR, Wednesday, 6 October

### Publications

The following is only a small representation of the achievements of members of PTRI in terms of journal articles, conference papers, book chapters and citations. Congratulations to all of you, in particular the following researchers who submitted their achievements for publication in Platform Technologies News. A full list of publications is available on the PTRI website.

#### Journal articles

Bansal V., Li V., O'Mullane A.P. and Bhargava S.K., 2010, Shape dependent electrocatalytic behaviour of silver nanoparticles. *Cryst. Eng. Commun.* (DOI: 10.1039/C0CE00215a).

Chua J.J.C., Fuss F.K., and Subic A., 2010, Non-linear rolling friction of a tyre-caster system: analysis of a rugby wheelchair. *Proceedings of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science*, in press.

Dickson M.J., Fuss F.K., and Wong K.G., 2010, Benchmarking of bocchia balls: roll distance, accuracy, stiffness, rolling friction and coefficient of restitution. *Sports Technology*, in press.

Fuss F.K. and Niegl G., 2010, Biomechanics of the Two-Handed Dyno Technique for Sport Climbing. *Sports Engineering*, 13:19-30, DOI: 10.1007/s12283-010-0052-1.

Garg A., Gupta S., Bhattacharjee S., Pandey D., Bansal V., Bhargava S.K. and Peng J.L., 2010, Absence of morphotropic phase boundary effects in BiFeO<sub>3</sub>-PbTiO<sub>3</sub> thin films grown via a chemical multilayer deposition method, *Condensed Matter*, 1.

Le Marshall J., Xiao Y., Norman R., Zhang K., Rea A., Cucurull L., Seecamp R., Steinle P., Puri K. and Le T., (2010) The beneficial impact of radio occultation observations on Australian region forecasts, *The Australian Meteorological and Oceanographic Journal (AMOJ)* V.60, pages: 121-125.

Low, A., Bansa, V., A visual tutorial on the synthesis of gold nanoparticles. *Biomed. Imaging Interv. J.* 2010, 6 (1), e9.

Pavelyev A. G., Liou Y., Wickert J., Zhang K., Wang C. and Kuleshov Y., (2010) Analytical Model of Electromagnetic Waves Propagation And Location of Inclined Plasma Layers Using Occultation Data, *Progress In Electromagnetics Research*, Vol. 106, 177-202, 2010.

Sirajuddin, Mechler A., Torriero A.A.J., Nafady A., Lee C-Y., Bond A.M., O'Mullane A.P. and Bhargava S.K., 2010, The formation of gold nanoparticles using hydroquinone as a reducing agent through a localized pH change upon addition of NaOH to a solution of HAuCl<sub>4</sub>, *Coll. Surf. A*, doi:10.1016/j.colsurfa.2010.08.041.

Wen D. Yuan Y. Ou J. and Zhang K., (2010) Ionospheric response to the magnetic storm on 21 August 2003 over China using GPS-based tomographic technique. *IEEE Transaction on Geosciences and Remote Sensing*, Vol 48, No.8, pp3212-17.

Xu X., Zhang K., and Wang H., (2010) Comparison of Precision of GPS Radio Occultation Profiles in Different Seasons, *Geomatics and Information Science of Wuhan Univ*, V35,N6, p.639-643.

Zhang K., Fu F., Liu G. and Zhu M., (2010) Meeting the challenge of complexity: interfacing multimedia technology and problem-based assessment in satellite positioning courses, *American Education Science Review*, Vol.1, No.1, pp.18--34. ISSN2077-6691.

#### Refereed conference papers

Alam F., Chowdhury H., Moria H., Fuss F.K., A comparative study of football aerodynamics, *Procedia Engineering*, Volume 2, Issue 2, June 2010, Pages 2443-2448.

Burton M., Subic A., Mazur M., Leary M., Systematic design customization of sport wheelchairs using the taguchi method, *Procedia Engineering*, Volume 2, Issue 2, June 2010, Pages 2659-2665.

Campbell J. L., O'Mullane A. P., Bansal V., Bhargava S. K., Templated synthesis of metallic and bimetallic nanoshells with applications in electrocatalysis. *Chemeca 2010*, Adelaide, Australia, 27-29 September 2010.

Chowdhury H., Alam A., Subic A., Aerodynamic performance evaluation of sports textile, *Procedia Engineering*, Volume 2, Issue 2, June 2010, Pages 2517-2522.

Clifton P., Subic A., Mouritz A., Snowboard stiffness prediction model for any composite sandwich construction, *Procedia Engineering*, Volume 2, Issue 2, June 2010, Pages 3163-3169.

Daima H. K., Selvakannan P.R., Bansal V., Bhargava S. K., Surface functionality driven antimicrobial activity: case study of amino acid reduced nanoparticles with different bacterial strains. *Chemeca 2010*, Adelaide, Australia, 27-29 September 2010.

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### Newsletter submission

Platform Technologies News is the quarterly newsletter of the Platform Technologies Research Institute and provides regular updates on achievements of, and events in and around the Institute. Thank you to those of you who have contributed to this newsletter by sharing your news and your achievements with us.

Please let the editor know if you are interested in submitting an existing publication, e.g. a position paper with some references to published material; or interesting contributions to leading-edge technology or platforms that we use in research and that may be of interest to others; or maybe paper sketches that are pilots for real papers.

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