

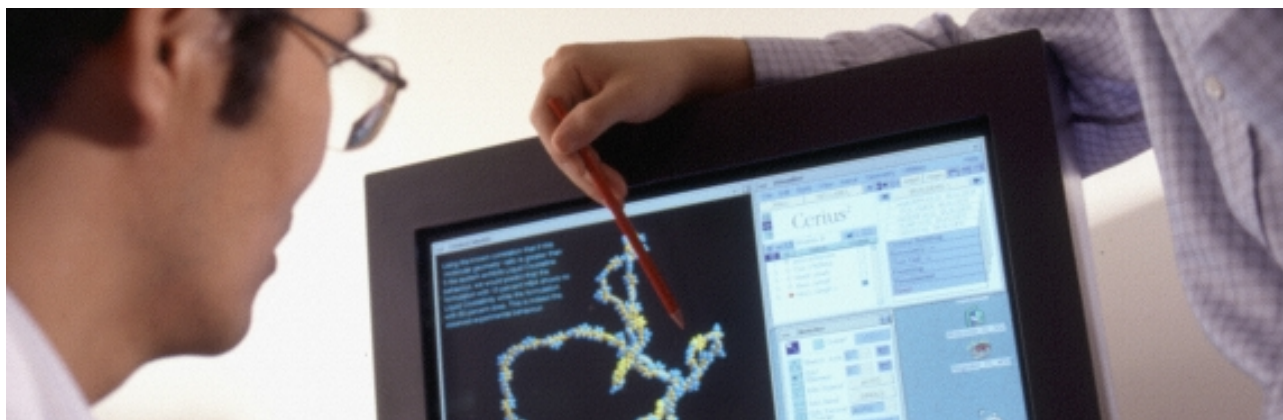
PERSPECTIVES

Research, Development and Commercialisation

Institute of Materials Research & Engineering (IMRE)

IMRE is a research institute supported by the Agency for Science, Technology and Research and is an affiliate of the National University of Singapore.

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Developing expertise for the future

By Prof Albert Yee

As I write, Singapore is trying mightily to free itself from the grips of a lingering economic downturn. A question that the Reader may want to know is how and in what way can a national research institute like IMRE help alleviate the situation.

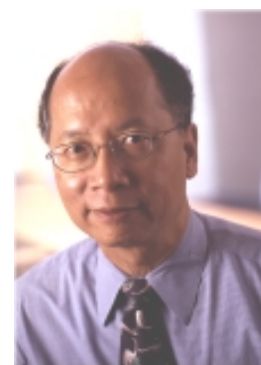
IMRE's responses are both immediate and long term.

By inviting industrial companies to visit IMRE, and by sending our researchers to visit industry, we have found several small and medium enterprises that are eager to upgrade their technical capabilities. These opportunities for partnership have been further enhanced with A*STAR's recent launch of the SMET-Up (Small- and Medium-sized Enterprise Technology Upgrading) scheme. In this scheme IMRE's technical staff can be seconded to SMEs for various periods of time with the salary cost partially borne by the company and the research institute, an incentive to SMEs who may not possess the necessary resources to recruit exceptional talents. In this way, the most direct and effective transfer of know-how or highly trained personnel can occur with very little risk to the company or the staff. It is hoped that SMEs that take advantage of this scheme would become more competitive and emerge from the downturn stronger than ever.

Our long-term response is to redouble our efforts in the training of skilled manpower to achieve the highest levels of expertise.

Human resource of high competence, creativity and professionalism will be the determining factors in how successful a knowledge-based Singapore will be in global competition. For this reason IMRE has consistently emphasised the importance in hiring the best, and further enhancing the capabilities of our staff as they are a precious resource above and beyond mere technical output. We provide our research teams with the extra edge by equipping them with the proficiency in selecting technical objectives and projects, and the realisation that collaboration with people from different research areas can bring about unique and impactful achievements.

It is often the case in research that new PhDs are not as adept at choosing the



Prof Albert Yee, Director of IMRE



Institute of
Materials Research
and Engineering

Editorial

Dear Readers

As Singapore's economy sails into uncharted waters, contribution by the research institutes will prove vital in maintaining a competitive edge in the global arena. Innovation in the form of new technologies, advancements in existing research and the nurturing of research talent to help industry are just some of the ways of keeping the nation's knowledge-based economy sharpened.

This issue of Perspectives highlights some of IMRE's manpower initiatives that are designed to encourage an influx of new research talent, and increase the potency of the research expertise already in place.

From stringent recruitment measures to team building to promoting multidisciplinary research, human capital development has remained one of IMRE's key priorities. Trained researchers can help transfer research know-how to local industry through symposia, research publications and intellectual property. Schemes like the new T-Up initiative will also make the R&D talent pool accessible to local enterprises through the secondment of researchers (see A*STAR website, <http://www.a-star.edu.sg> for more information). Programmes designed to attract youth to R&D and postgraduate studies will also continue to encourage, and nurture next generation scientists to ensure continuity.

As outlined in our Director's New Year message, skilled manpower of the highest levels of expertise will be a crucial contributing factor in sustaining Singapore's knowledge-based economy. After all, an organisation is only as good as its people.

The Editor



Events like IMRE's Industry Symposium help bring local industry and our researchers together to share and transfer expertise and technology

most critical problem to work on through lack of experience. Their vision and approach to research problems are nearly always limited to their own technical expertise. This is an area where IMRE can provide significant enhancement. To begin with, we have a small but extremely capable group of scientists - as good as any in the leading industrial laboratories in the US - who lead multidisciplinary teams in confronting challenging and complex problems. Young scientists working in these teams are presented with the opportunity to learn about and from the various disciplines. Promising new researchers are also given the chance to propose multidisciplinary research projects that are subjected to rigorous panel assessments and regular project reviews. These scientists, upon joining industry, are likely to be far more effective researchers than a fresh PhD - a goal that we hope will make industries more competitive, and assist in the creation of new products.

IMRE's distinct training characteristics, which are being applied to postgraduate education as well, complements but does not replace the more traditional discipline-based and directed research typical of most university postgraduate programmes.

We have begun a collaborative effort with the National University of Singapore in training postgraduate students using this model.

Speaking from personal experience, working with graduate students is serious business. I will never forget the lessons I learnt from my mentor as a graduate student myself, and my graduate students have in turn been marked in indelible ways by the tutelage they received under me. Those in the role of mentors must be keenly aware that this is an awesome responsibility, for we shape the way these students approach technical problems in research and in life. Presenting trivial or non-challenging problems, and not stimulating critical thought produce PhDs who will make little contribution to science and industry. 🌐

Inaugural Long Service Award

By Ms Wong Siu Lin
Human Resource &
Administrative Officer,
Personnel Department

IMRE held its inaugural Long Service Award ceremony for staff during the annual staff event held on 15 November 2002.



Prof Yee (left) presenting one of the awards to Dr Mark Yeadon, seen here carrying his daughter

The awards were to honour IMRE's dedicated staff who have remained committed to the institute and shared in its many achievements and milestones in materials research since being founded in 1996.

Training and Teambuilding

By Ms Evelyn Oeij, Assistant Planning & Development Manager, Planning & Development Department



Everyone in IMRE is an integral part of the organisation and has a role to play in its development

Materials research and engineering is multi-disciplinary in nature. Researchers from all disciplines – physics, chemistry, materials science, and electrical engineering, among others – must work together in a cohesive team in order to create synergy. To encourage team spirit, enforce the need for synergy and foster a healthy working relationship among researchers, IMRE recently conducted an experiential teambuilding experience at the Outward Bound Singapore on Pulau Ubin. It represents a customised approach to learning that engages people in action, reflection, transfer and application.

The teambuilding exercise provided personal challenges and learning for the staff. The sessions helped to alter formed perceptions, provide opportunity to understand and appreciate one another's strengths, and showed the benefits of working together towards achieving a common objective.

The activities put the researchers to the test by removing comfort zones, and promoting communication, trust, mutual support, creative thinking, planning as well as

THE OBS CHALLENGE

IMRE had organised a number of staff teambuilding exercises at Outward Bound Singapore as an effective avenue for staff to get together, mingle and cultivate



Solidarity. Building team spirit at OBS

stronger ties and build better relationships.

Teambuilding is a method of formalising the power of collaboration among individuals, and blend the talents and skills of diverse people – a method that has been constantly advocated through IMRE's multidisciplinary approach. This collaboration helps individuals to leverage their skills, knowledge and time for their own benefits and that of IMRE. 🌐

perseverance. Response from the participants was both enthusiastic and encouraging as they came together to develop team spirit, communicate openly and learn to manage differences.

The challenge now would be the sustainability of the knowledge, the initiation of the learning points, and applying these to the work environment in IMRE. Looking ahead, IMRE would be exploring new initiatives to sustain efforts in team building, and new methods for cultivating open, direct and honest communication. 🌐

A total of 14 staff, all of whom had been with IMRE for 5 years, were given recognition for their loyal service. As a token of appreciation, the staff were presented with a plaque, a certificate of recognition and a cash reward. The recipients were:



Ms Ivy Ko (left) being congratulated by Prof Yee

Dr Peter Malcolm Moran (Manager, Micro- & Nano Systems Cluster)
Dr Xu Yuan (Senior Research Fellow, Micro- & Nano Systems Cluster)
Dr Yao Kui (Senior Research Fellow, Micro- & Nano Systems Cluster)
Dr Mark Yeadon (Senior Research Fellow, Materials Science & Characterisation Lab)
Dr Zhu Furong (Senior Research Fellow, Opto- & Electronics Systems Cluster)

Dr Liu Zhaolin (Research Fellow, Molecular & Bio- Materials Cluster)
Dr Dong Jianrong (Research Fellow, Opto- & Electronics Systems Cluster)
Dr Pan Jisheng (Research Fellow, Materials Science & Characterisation Lab)
Ms Xiao Yang (Senior Research Officer, Molecular & Bio- Materials Cluster)
Ms Low Lai Lin (Senior Administrative Assistant, Finance Department)
Ms Nor Sita Binte Abdul (Systems Analyst, Management Information Systems Department)
Ms Tan Wei Wei (Graphic Designer, Corporate Communications Department)
Ms Ko Cheng Hong, Ivy (Administrative Assistant, Personnel Department)
Ms Koh Swee Choo, Katherine (Office Attendant, Personnel Department)

A special award was also presented to IMRE's former Deputy Director, Dr Chou Sun Chee who had provided valuable contribution to the development of the Institute. 🌐

Talent Recruitment

By Ms Ng Puay Chen, Senior Administrative Officer, Planning & Development Department

Aligning with A*STAR's emphasis of developing the necessary human capital required for the present and future needs of Singapore's industries, IMRE has been more actively engaged in recruitment and the development of researchers. IMRE's recruitment drive is a two-pronged approach. We create awareness to cultivate a healthy pipeline of young and aspiring scientists, and recruit the best materials science and engineering researchers from around the world.

To create awareness about the Institute and the human capital development programmes such as the National Science Scholarships (NSS) and the recently announced A*STAR Graduate Scholarship, a series of roadshows targeted at science and engineering students were conducted at Cornell University, University of Michigan and Stanford University in late September 2002. An overview of IMRE, the local research scene and the prospect of a research career in Singapore were the key messages presented to the students. A reception was also held for the students to interact with our staff, establish networking, and to hold discussions with students who had an immediate interest in working in IMRE and Singapore.

Young and aspiring scientists are the future driving

force in R&D. IMRE hopes to encourage graduating students in materials science and engineering, especially Singaporeans, to pursue a research career with IMRE. We are also looking at doing more roadshows in other countries like the UK and Australia, where the Singapore student population is large.

IMRE has an active recruiting programme. Apart from participating in local career fairs and advertising in the media, we attend top international conferences in the field of research, where our researchers assist in taking on the role of "recruitment officers". We have also adopted a targeted approach in our recruitment efforts by identifying and directly approaching suitable candidates ahead of a conference to arrange possible meetings with them. This approach has proven successful in our recent campaign at the Materials Research Society Fall meeting in Boston.

For those seeking a challenging and rewarding career in materials research and engineering, exciting opportunities awaits you in IMRE.

For more details, please contact:

Ms Ng Puay Chen

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3 Research Link, Republic of Singapore 117602
Email pc-ng@imre.a-star.edu.sg



Good people make for a good organisation

Dancing to the tune of research

By Mr Eugene Low
Publications Executive
Corporate Communications
Department

Ms Wu Shan Shan and more like her represent the future of the local research community

In the continuing focus on our research staff, we profile another of our research scientists, Ms Wu Shan Shan, from IMRE's Molecular and Biomaterials Cluster (MBMC).

Ms Wu is a full-time Research Officer working on materials systems with applications in gene delivery. With a Bachelors and Masters in Chemical Engineering from Stanford University, she is one of the many talented scientists in the fast growing local research pool.

It comes as no surprise that she is an avid reader of science fiction and fantasy novels and is, as she puts it, a PC game addict. However, far from being just a "geek chick", she works out regularly in the gym and loves to dance.

1) What is your research area of interest?

Right now, I'm interested in a lot of areas that fall under the umbrella of biotechnology, especially biochemical engineering. I tend to enjoy grappling intellectually with things at a molecular or cellular level, rather than with the more physical, concrete subjects like anatomy or physiology. I believe the types of thinking skills,

concepts and analytical tools used are as important in sustaining my research interest as the questions being tackled in research.

2) What was your education like?

I completed my secondary school and junior college studies at Raffles, after which I took up a scholarship with the Public Service Commission and enjoyed four exciting years in Stanford University. Although my Bachelor's and Master's degrees were in chemical engineering, a good portion of my coursework was life sciences-related.

I don't enjoy talking about my education because people tend to fixate only on grades and jump to conclusions about me. I did well in all my subjects save one. I would have achieved perfect results for the O and A levels if it weren't for my Mandarin subject. But the education system did train me for the years ahead. Stanford University didn't prove to be more competitive than Raffles Junior College (wry smile) and I graduated at the top of the School of Engineering.

3) What do you like to do outside of research?

My hobbies aren't exactly exciting. I read a lot to pass time, especially when I am travelling to and from IMRE (more than one hour each way). I read mostly fantasy and some science fiction because these genres are not restricted by the confines of the real world we live in.

Something a little more exciting is my interest in dancing. Anything from regular clubbing to swing and waltz, but that isn't really a hobby. I took two classes in social dancing in Stanford as well as jazz & hip-hop at the YMCA. At home, I spend a lot of time playing computer games, mainly role-playing and problem-solving ones.

4) Was it hard striving to become a researcher?

I have barely started becoming a researcher. I would say however, that getting started in research is easier than getting a corporate job. Your professors help to rope you in when you are in school, and in Singapore, A*STAR has made it very easy to start off in an RI. They make young people feel very welcome. The transition between school and work is also fairly smooth in research, as opposed to a hard-core engineering job, for example. I like working with both my hands and

brain, and having variety in the tasks I tackle. The variety makes a desk-bound job pale in comparison - I wouldn't be able to handle a job like that.

5) What are your plans for the future?

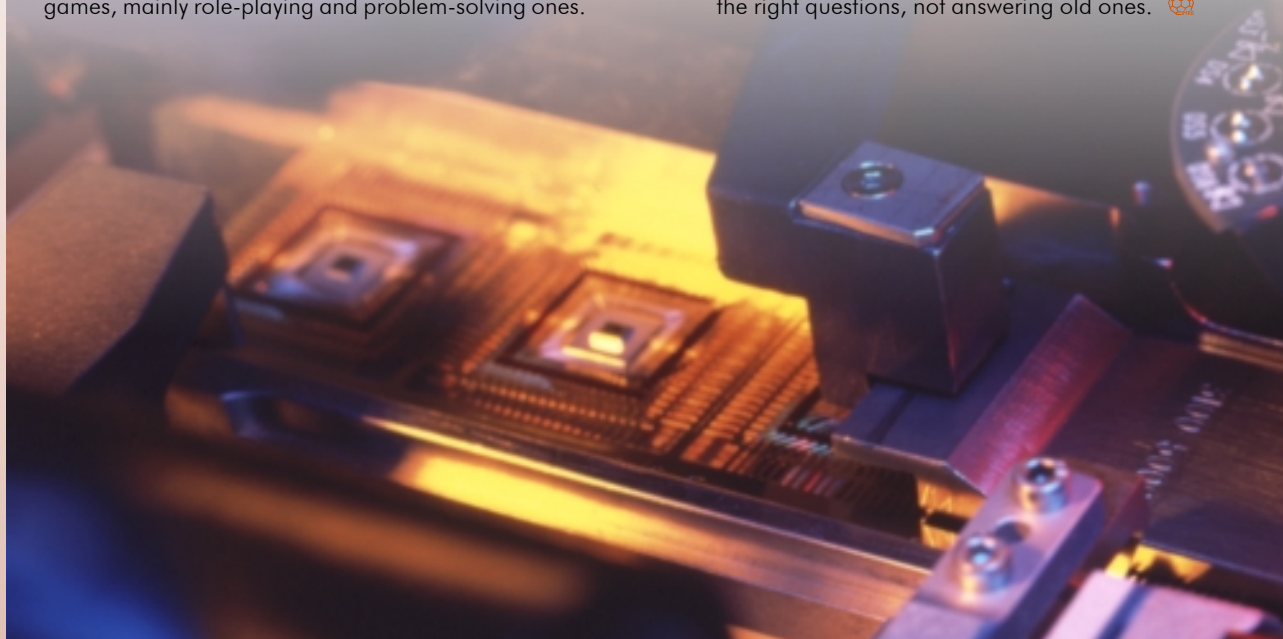
I am planning to further my studies and obtain a PhD in either bioengineering or biomedical engineering, probably in the US, or else in Singapore, starting Fall 2003. I'm still in the process of applying to the schools and scholarship programmes, including the National Science Scholarships offered by A*STAR.

*Research is
about asking the
right questions,
not answering
old ones.*

6) Do you have any words of encouragement for aspiring, young scientists?

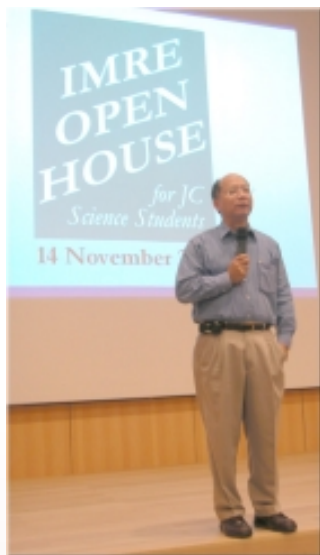
I think the future looks bright for Singapore research. I have met a few and am delighted that a lot more junior college and polytechnic students are expressing an interest in research. I am looking forward to working with them in five years or so.

Trust yourself and know yourself. Before jumping in with both feet, give it some real thought if you think research is for you. Don't despair as well if your academic results don't match up. Research is about asking the right questions, not answering old ones. 🧠



Open House for Junior College (JC) students

By Ms Chua Sze Sze, Administrative Officer
Research Administration Department



Prof Albert Yee, IMRE's Director, gave the opening address before the start of the event

environment and to promote A*STAR's NSS scholarship scheme. The students were brought on a tour of IMRE's

IMRE organised an open house for Year One JC Science Students on 14 November 2002. A total of 42 students from JCs around Singapore attended the event. The participating JCs included Nanyang JC, Serangoon JC, Victoria JC, Anglo Chinese JC and Anderson JC.

The objective of the open house was to promote R&D awareness to the students, to introduce them to life in a research-based



Students visiting one of the many laboratories in IMRE to find out more about research life

Biomaterials Cluster and Mr Roderick Lim, an IMRE postgraduate student, also shared their experiences on working and studying in IMRE.

The students were also introduced to the BS-PhD scholarship under the National Science Scholarship (NSS) scheme, which is administered by the Agency for Science Technology and Research (A*STAR). The BS-PhD scholarship offers support for both undergraduate as well as postgraduate studies up to the PhD level, at selected overseas universities. The scholars will return to serve attachments with local research institutes like IMRE and are expected to move on to local industry, and contribute to R&D. 🌐

Some of the JC students attending the Open House



various laboratories to see firsthand the multidisciplinary research being conducted.

Ms Wu Shan Shan, a Research Officer from the Molecular and

Sub-SAB Meeting

By Ms Evelyn Oeij
Assistant Planning & Development Manager
Planning & Development Department



Participants of the sub-SAB meeting

IMRE hosted its Sub-Scientific Advisory Board (SAB) meeting from 9th-10th December. A supplement to the annual SAB meeting, this meeting focused on topical sessions primarily centred on chemicals and the related areas. Two SAB members namely, Prof Edward Kramer from the Department of Materials & Chemical Engineering, University of California, Santa

Barbara, and Prof Jackie Ying from the Department of Chemical Engineering, Massachusetts Institute of Technology, attended the meeting.

The two-day meeting involved presentation by researchers from IMRE's Molecular and Biomaterials Cluster on topics that included chemicals, polymer technology, nanomaterials, and biomaterials. There were also panel discussions on the strategic directions of performance materials and catalytic materials, and their applications in industry.

Invited representatives from the Economic Development Board were also on hand to present an overview of Singapore's chemical cluster industry and its activities. Apart from a visit to the relevant IMRE laboratories, a tour of Jurong Island was arranged for the SAB members so that they could see the current developments and the involvement of global players in the chemicals hub.

The next SAB meeting is scheduled on 15th January 2003 and will focus on reviewing IMRE's research projects and scientific content in greater detail. 🌐

Visitors and Events

Laboratory visit by French-Singapore Photonics

Meeting delegation

7 October 2002

Some 20 visitors from France, EDB and A*STAR were taken on a tour of IMRE's optoelectronics-related facilities as part of the French-Singapore Photonics Meeting. The visitors from OpticsValley, a non-profit Paris-based organisation, were in Singapore to look at possible areas of research collaboration. Apart from the organic light-emitting devices (OLEDs), and the optoelectronics and photonics laboratory, the visitors were also briefed on the capabilities of IMRE's characterisation laboratory.

Visit by Penang Development Council

9 October 2002

IMRE's expertise in optoelectronics research was showcased to a 15-member delegation attending the Photonics World Show. The group from the Penang Development Council of Malaysia were briefed on the progress of the research performed in the OLED and optoelectronics laboratories.

Postgraduate students from Hong Kong University (HKU) and the Chinese Students and Scholars Association (CSSA)

14 October 2002

Postgraduate students from HKU and CSSA visited IMRE as part of a study tour arranged by Contact Singapore's Hong Kong office. The students were given a brief introduction on IMRE before being ushered to the various laboratories. IMRE's research scientists and students from the characterisation, OLED, biosensors and biomaterials laboratories briefed the students on some of the Institute's research projects and expertise.

Visit by members of the Singapore Institute of Manufacturing Technology (SIMTech) Scientific Advisory Board (SAB)

17 October 2002

SAB members from SIMTech visited IMRE to familiarise themselves with the research institute and to give them a broader perspective on the research work conducted here. Apart from an overview of IMRE's

research activities, the guests also toured some of the laboratories.



Postgraduate students from HKU and CSSA being briefed on IMRE's characterisation capabilities



The opening address at the French-Singapore Photonics meeting



JC principals and their science HODs were given an insight into work in a research laboratory



Members of the Penang Development Council being briefed on OLED research



SIMTech SAB members toured some of IMRE's facilities

IMRE Junior College (JC) Open House

14 November 2002

42 JC students were given the unique opportunity to find out about life in a research-oriented career during an Open House organised by IMRE. A special feature of the event involved the sharing of experiences by two of IMRE's young researchers with the objective of giving an insight into the world of local research. The students from the six JCs also interacted with researchers during a laboratory tour of the various research clusters. For more details, please refer to the main article in this issue.


Visit by JC Principals and Science Heads-of-Department (HODs)

20 November 2002

IMRE hosted a laboratory tour for a delegation of 14 JC principals and science HODs. The visit, organised by A*STAR, was to familiarise the visitors with the local research institutes and the work conducted there. The visitors from 9 junior colleges were taken on a tour of the characterisation, organic light-emitting device, biosensors, and biomaterials laboratories.

Sub-Scientific Advisory Board (SAB) Meeting

9-10 December 2002

IMRE held its sub-SAB meeting with topical sessions that involved the Molecular & Bio-Materials Cluster (MBMC). SAB members, Prof Edward Kramer from the University of California at Santa Barbara, and Prof Jackie Ying from Massachusetts Institute of Technology, attended the meeting. The two-day meeting involved presentations by IMRE's researchers on topics that included chemicals, polymer technologies, nanomaterials, and biomaterials. There were also panel discussions on the strategic directions for performance materials and catalytic materials, and their applications in industry. The SAB members were also brought on a tour of IMRE and the Jurong Island chemicals hub. For more details, please refer to the main article in this issue. 

Publications

Introduction

Listed here are the papers published by IMRE's researchers for the period between October and November 2002.

Publications - OCTOBER 2002

- Ultrathin glass for flexible OLED application**
 M. D. J. Auch, O. K. Soo, G. Ewald, Chua Soo-Jin
Thin Solid Films, 2002, 417, pp. 47-50 (2002)
 For further information, contact: m-auch@imre.a-star.edu.sg
- Low moisture permeation measurement through polymer substrates for organic light-emitting devices**
 R. S. Kumar, M. Auch, E. Ou, G. Ewald, Chua Soo-Jin
Thin Solid Films, 2002, 417, pp. 120-126 (2002)
 For further information, contact: rs-kumar@imre.a-star.edu.sg
- Degradation mechanisms in electrically stressed organic light-emitting devices**
 K. K. Lin, S. J. Chua, W. Wang
Thin Solid Films, 2002, 417, 36-39 (2002)
 For further information, contact: karen-kl@imre.a-star.edu.sg
- An in-situ sheet resistance study of oxidative-treated indium tin oxide substrates for organic light-emitting display applications**
 B. L. Low, F. R. Zhu, K. R. Zhang, S. J. Chua
Thin Solid Films, 2002, 417, pp. 116-119 (2002)
 For further information, contact: fr-zhu@imre.a-star.edu.sg
- Synthesis and characterisation of a novel conjugated polymer containing PPV oligomer and fluorene**
 S. Lu, Q. L. Fan, Y. Xiao, S. J. Chua, W. Huang
Thin Solid Films, 2002, 417, pp. 215-220 (2002)
 For further information, contact: y-xiao@imre.a-star.edu.sg
- Influence of donor and acceptor substituents on the electronic characteristics of poly(fluorene-phenylene)**
 G. Zeng, S. J. Chua, W. Huang
Thin Solid Films, 2002, 417, pp. 194-197 (2002)
 For further information, contact: sj-chua@imre.a-star.edu.sg
- Controlled group V intermixing in InGaAsP quantum well structures and its application of the fabrication of two section tunable lasers**
 J. H. Teng, J. R. Dong, S. J. Chua, M. Y. Lai, B. C. Foo, D. A. Thompson, B. J. Robinson, A. S. Lee and John Hazell
J. Appl. Phys. 2002, vol. 92, pp. 4330-4335
 For further information, contact: jh-teng@imre.a-star.edu.sg
- Global optimisation and design for micro-electromechanical systems devices based on simulated annealing**
 Andojo Ongkodjojo, Francis E.H. Tay
 (Electronic Version) *Journal of Micromechanics and Microengineering*. Volume 12, Number 6, November 2002, pp 878-897
 For further information, contact: an-ong@imre.a-star.edu.sg
- Microcontact printing of catalytic nanoparticles for selective electroless deposition of metals on nonplanar polymeric substrates**
 W. K. Ng, L Wu and P. M. Moran
Applied Physics Letters, 81, pp 3097- 3099 (2002)
 For further information, contact: p-moran@imre.a-star.edu.sg

- Investigation of in-situ trench etching process and Bosch process for fabricating high-aspect-ratio beams for microelectromechanical systems**
 Kitt Eai Kok, Won Jong Yoo, K. Sooriakumar, J.S. Pan, E.Y. Lee
J. Vac. Sci. Technol. B 20, P1878
 For further information, contact: js-pan@imre.a-star.edu.sg

Publications - NOVEMBER 2002

- Intermolecular interaction in multicomponent supramolecular complexes through hydrogen-bonding association**
 Jianwei Xu, Chaobin He, Kee Chua Toh and Xuehong Lu
Macromolecules, v35, p8846-8851, 2002
 For further information, contact: jw-xu@imre.a-star.edu.sg
- Reversal imprinting by transferring polymer from mould to substrate**
 Huang XD; Bao LR; Cheng X; Guo LJ; Pang SW and Yee AF
Journal of Vacuum Science & Technology B, Vol 20 (6), pp. 2881-2886
 For further information, contact: xd-huang@imre.a-star.edu.sg
- Nanoimprinting over topography and multilayer three-dimensional printing**
 Bao LR; Cheng X; Huang XD; Guo LJ; Pang SW and Yee AF
Journal of Vacuum Science & Technology B, Vol 20 (6), pp. 2872-2877
 For further information, contact: xd-huang@imre.a-star.edu.sg
- Polymers synthesised from (3-Alkylthio)thiophenes by the FeCl₃ oxidation method**
 J. M. Xu, H. S. O. Chan, S. C. Ng and T. S. Chung
Synthetic Metals, 132 (2002) 63-69.
 For further information, contact: jm-xu@imre.a-star.edu.sg
- Microwave-assisted synthesis of carbon supported Pt nanoparticles for fuel cell applications**
 W. X. Chen, J. Y. Lee and Z. Liu
Chemical Communications 2002, (21), 2588 – 2589
 For further information, contact: zl-liu@imre.a-star.edu.sg
- Molecular mass determination of polyamic acid ionic salt by size-exclusion chromatography**
 P. S. G. Krishnan, S. Veeramani, R. H. Vora, T-S. Chung, S-I. Uchimura and H. Sugitani
Journal of Chromatography A 977 (2002) 207-212.
 For further information, contact: sg-krishnan@imre.a-star.edu.sg
- Direct electrochemistry of horseradish peroxidase at carbon nanotube powder microelectrode**
 Y. D. Zhao, W. D. Zhang, H. Chen, Q. M. Luo, S. F. Y. Li
Sensors and Actuators B: Chemical, 2002, 87:168-172
 For further information, contact: wd-zhang@imre.a-star.edu.sg
- Hydrothermal epitaxy of KTaO₃ thin films**
 G. K. L. Goh, C. G. Levi and F. F. Lange
Journal of Materials Research 17(11), 2852 (2002)
 For further information, contact: g-goh@imre.a-star.edu.sg
- Efficient design of micro-mechanical gyroscopes**
 V A Apostolyuk, Logeeswaran V J, F E H Tay
Journal of Micromechanics and Microengineering, Volume 12, Number 6, 948
 For further information, contact: v-apostol@imre.a-star.edu.sg
- Thermal stability of (HfO₂)_x(Al₂O₃)_{1-x} on Si**
 H. Y. Yu, N. Wu, M. F. Li, Chunxiang Zhu, B. J. Cho, D. L. Kwong, C. H. Tung, J. S. Pan, J. W. Chai, W. D. Wang, D. Z. Chi, C. H. Ang, J. Z. Zheng and S. Ramanathan
Applied Physics Letters 81(2002) 3618
 For further information, contact: n-wu@imre.a-star.edu.sg

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