

CERAMAH TEKNIK TECHNICAL TALK

GEOSCIENCES IN THE DIGITAL AGE: STRATEGIC ROLES IN ADDRESSING MAJOR CHALLENGES OF THE 21ST CENTURY

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The talk on “Geosciences in the Digital Age” was presented by Dr. Ian Lambert on Monday, 15 August in the Nilam Room, Minerals and Geoscience Department Malaysia (JMG), Jalan Tun Razak, Kuala Lumpur. The talk was well attended by about 20 JMG staff and academics from the local universities.

Dr Lambert received his Ph.D. in geochemistry from the Australian National University. After post-doctorate research at the University of Chicago, he returned to Australia to take up a position with CSIRO, where he conducted research on mineral deposits and stable isotopes. In the course of his research career, he won several international awards, including a Japanese Government Fellowship for Foreign Specialists, an Academia Sinica Fellowship and an Alexander von Humboldt Fellowship.

Since 1990, Dr Lambert has held a number of senior executive roles in resource and environmental agencies in the Australian Government, most recently as a Group Leader in Geoscience Australia – the national geoscience and geospatial information agency. Ian Lambert is a member of Australia’s National Committee for Earth Sciences and the Australian Geoscience Council. He represents Australia as a Vice Chair of the IAEA-OECD/NEA Uranium Group and the UN Experts Group on Resource Classification.

Dr Lambert is currently focused on his role as Secretary General of the 34th International Geological Congress, which will be held in Brisbane in August 2012.

Abstract: There are many challenges in meeting the needs of societies while sustaining Earth systems. Difficult decisions have to be made and there is increasing scrutiny of their effectiveness and validity. With increasing levels of education, societies are more capable of questioning what they see as poor decisions and policies.

There are emerging opportunities for applications of the geosciences in multidisciplinary systems approaches to underpin important decisions and policies on issues such as mineral and energy resources, groundwaters, soils, competing land uses, geohazards and emergency management. Ongoing advances in web technologies and in data transfer standards are making geological and geospatial data and information much more accessible online and reusable for purposes beyond those they were originally collected for. In parallel, the rapid increases in available computing power and in open source processing algorithms are enabling geoscientists globally to analyse and model these data. In combination, these new developments are rendering multidisciplinary approaches much more effective and transparent.

Government geosurveys and research agencies need to play pivotal roles in ensuring that the geosciences are accepted as important components in integrated approaches to address issues relating to natural resources, land use and hazards, in particular. Universities also need to play vital roles in instilling the importance of high quality multidisciplinary systems science.

This presentation will illustrate, at a high level, how geoscientists in Australia are involved in addressing a number of major challenges faced by the nation. While the challenges facing other countries differ, the principles discussed have universal application.

The presentation will also briefly refer to relevant areas of focus within the scientific program for the 34th International Geological Congress to be held in Brisbane, Australia 5-10 August 2012 (www.34igc.org). While this large and prestigious meeting will cover the whole spectrum of the geosciences, it will feature a wide range of sessions on the influential roles the geosciences can play in the digital age.

Technical Talk “Geosciences in the Digital Age: Strategic Roles in Addressing Major Challenges of the 21st Century” by Dr. Ian Lambert, 15 August 2011.

