Research paper

Materials

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Analysis and modelling

Cover story – continued

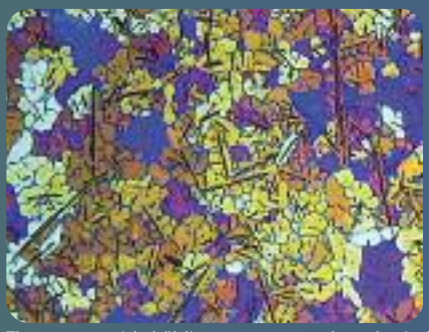
A general participation of desert areas in the surface of land in our globe depends from the professional activeness of almost each engineer. From the obvious reasons that problem concerns also managers and especially politics.

On 3rd -15th December 2007 the United Nations Climate Change Conference, hosted by the Government of Indonesia, took place at the Bali International Convention Centre and brought together more than 10,000 participants, including representatives of over 180 countries together with observers from intergovernmental and non-governmental organisations and the media. The two week period included the sessions of the Conference of the Parties to the UNFCCC, its subsidiary bodies as well as the Meeting of the Parties to the Kyoto Protocol. A ministerial segment in the second week concluded the Conference. Opening the Conference Mr Yvo de Boer UNFCCC Executive Secretary said "Bali, the 'island of the Gods,' is a prime example of the beauty of our natural environment. At the same time, Indonesia has first-hand experience of the extreme weather events caused by climate change. Bali is therefore a poignant setting for the forthcoming crucial international negotiations on the way forward to save our planet from the devastating effects of global warming.(...) For economic growth, water and food security, and for people's survival – especially those living in the poorest communities in developing countries. The recent joint award of the 2007 Nobel Peace Prize to the IPCC for its work in disseminating knowledge on climate change further underlines the implications for overall peace and security. (...) The spirit of Bali lies in the appreciation of its people for "Ibu Pertiwi" (mother earth) and also in the principle of collectivity. In this spirit, we must take a collective step forward in establishing a roadmap for a post-2012 agreement."

The conference culminated in the adoption of the Bali roadmap, which charts the course for a new negotiating process to be concluded by 2009 that will ultimately lead to a post-2012 international agreement on climate change. Ground-breaking decisions were taken which form core elements of the roadmap. They include the launch of the Adaptation Fund as well as decisions on technology transfer and on reducing emissions from deforestation. These decisions represent various tracks that are essential to achieving a secure climate future. His Excellency Mr. Rachmat Witoelar, the President of the United Nations Climate Change Conference said on 15th December 2007: " We have a Roadmap! I am delighted to say that we have finally achieved the breakthrough the world has been waiting for: the Bali Roadmap! (...) The decisions we have taken in Bali together create the world's road map to a secure climate future. The governments assembled here have responded decisively in the face of new scientific evidence and significant advances in our thinking to collectively envision, and chart, a new climate-secure course for humanity (...) We have charted a course forward on reducing emissions from deforestation and on technology transfer, including an exciting new strategic programme (...). The world was expecting us to show true vision and leadership and I have no doubt that we have proven equal to that task. It is said that leaders are those who create the future. Here in Bali, you have demonstrated the leadership needed to create a sustainable future for us all."




Selected materialographical photo



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The paper entitled "Microstructure and mechanical properties of the Al-Ti alloy with calcium addition" by L.A. Dobrzański, K. Labisz and A. Olsen on a **page 183** shows the investigation results of mechanical properties and microstructure with intermetallic phases of the aluminium – titanium alloy with a defined content of Ca addition. The purpose of this work was also to determine the heat treatment conditions for solution heat treatment of the investigation alloys. The combination of light weight and high strength Ti-based alloys is very attractive for aerospace and automotive industries. Furthermore, the presence of calcium can bring into existence new unknown phases as well can enhance the thermal stability of ternary Al-Ti-Ca alloy because of its higher melting point then Al-Ti. As an implication for the practice a new alloy can be developed, some other investigation should be performed in the future, but the knowledge found in this research shows an interesting investigation direction.

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The paper written by Jenn-Yih Chen, Wann-Yin Lin, Bean-Yin Lee and Chi-Hsiang Chen on "Development of database and searching system for tool grinding" on a **page 159** informs that the most commercial tool grinding software is the modular-based design and use tool shapes to construct the CAM interface. Some limitations on the tool design are undesirable for customers. On the contrary, employing not only the grinding processes to construct the grinding path of tools but the searching system combined with the grinding software, it gives more flexible for one to design new tools. At first the tool grinding software with open architecture was employed to design and plan grinding processes for seven types of tools. According to the characteristics of tools (e.g. types, diameter, radius and so on), 4802 tool data were established in the relational database. Then, the SQL syntax was utilised to write the searching algorithms, and the human machine interfaces of the searching system for the tool database were developed by C^{++} Builder. The used tool database in this study only includes some specific tools such as the square end mill. The step drill, taper tools, and special tools can also be taken into account in the database for future research. A novel tool database and searching system is presented for tool grinding. Using this system can save time and provide more convenience on designing tools and grinding. In other words, the company productivity can be improved.

Manufacturing and processing

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