

Biomimetics boom calls for standards

Also known as “bionics” or “biomimicry,” biomimetics is the science of applying designs from nature to man-made systems and technology. Bio-inspired materials and design are gaining interest in many fields, including aerospace technology, building and civil engineering, medical technology, and sports equipment.

ISOfocus talks to two members of ISO technical committee ISO/TC 266, *Biomimetics* – Dr. Ljuba Woppowa, General Secretary of the VDI society Technologies of Life Sciences, and her colleague Dr. Heike Seitz – to discuss the importance of this growing industry and the usefulness of standards.

ISOfocus : How is biomimetics different from traditional science and engineering?



Ljuba : The basic concept of biomimetics is learning from nature and is not restricted to any research area.

It is not enough to simply imitate nature and copy natural constructions ; innovations and solutions to practical problems can be provided through applying the knowledge gained from biological systems by interdisciplinary cooperation.

How has biomimetics evolved over the last few years?

Heike : Biomimetics has evolved tremendously. Extraordinary and well-known examples for biomimetic solutions are the Velcro, the Lotus-Effect, the artificial shark skin or the Flectofin, awarded

the International Bionic Award 2012 – and many more. Biomimetic applications are complex, requiring intensive research and development. But they have the potential to foster new industries that positively impact the economy.

Is it possible to standardize the highly interdisciplinary and creative approach of bio-inspiration?

Ljuba : International Standards would be helpful for the adoption of biomimetic processes. ISO/TC 266 was established in 2012 to prove this question and provide the first International Standards for industry. Four working groups have been created :

- Terminology and methodology
- Structures and materials
- Biomimetic structural optimization
- Knowledge infrastructure of biomimetics

Any future meetings? How can people join?

Heike : The next meeting of ISO/TC 266 will be held on 29-30 October 2013 in Prague, the Czech Republic. Those interested in participating should contact their national standards bodies. **EGD**



Photo: NASA

Velcro has been to the moon almost as many times as humans. The inspiration for the ubiquitous adhesive material comes from the plant burdock.

Standards and sustainable innovations

“Standardization and the International Transfer of Sustainable Technologies” was the theme of a workshop hosted recently by ISO in Geneva, Switzerland.

The workshop highlighted the need for international policy coordination.

Experts from different international organizations, such as the Organisation for Economic Co-operation and Development (OECD), World Intellectual Property Organization (WIPO), European Patent Office (EPO), World Trade Organization (WTO), International Centre for Trade and Sustainable Development (ICTSD) and the European Commission, exchanged ideas on how different regimes interact in shaping the international diffusion of sustainable innovations.

The international transfer of sustainable technologies is a sensitive area and International Standards have an important role to play in harmonizing technologies while protecting free trade, intellectual property rights and the global environment.

The workshop highlighted the need for international policy coordination. It also acknowledged company-led initiatives, such as private food standards for promoting effectively and efficiently sustainable innovation. The event was organized by the Chair of Innovation Economics of the Berlin Institute of Technology. Dr. Daniele Gerundino, Strategic Advisor to the ISO Secretary-General, commented: “ISO recognizes the relationship between standards and innovation and is promoting several initiatives to better highlight and strengthen this link. We look forward to continuing the interaction with participating organizations.”



Fourteenth ISO Secretaries' Week held in June 2013 in Geneva, Switzerland.

ISO Secretaries' Week

As Secretary Support for ISO/TC 160, Glass in building, Institute Committee Manager Javier Valencia commented: “Through the high competence of the leaders of ISO, I had the opportunity this week to deepen my knowledge further in relation to my work as ISO/TC Secretary Support. No doubt, I will be able to implement the knowledge acquired via better and more efficient interaction between the members and, at the same time, work to resolve their difficulties. I'm looking forward to that!”



Enter the world of conformity assessment

The ISO Committee on conformity assessment (ISO/CASCO) is making headway. The committee recently undertook the systematic review of its two key standards: ISO/IEC 17011 on requirements for accreditation bodies and ISO/IEC 17000 on conformity assessment vocabulary and general principles. It is expected that any future revision of these important standards will bring consistency and clarity to the market. ISO/CASCO is also fostering cooperation with regulatory authorities by holding the workshop “Impact of economic globalization, regulation and consumer safety on conformity assessment” on 11 October 2013 in Beijing, China. Hosted by the Standardization Administration of China (SAC) and the Certification and Accreditation Administration of China (CNCA), the event will close off the ISO/CASCO plenary week. For more information, see www.iso.org/cascoc2013.

Gearing up electric cars

Global automobile experts came together for the plenary meeting of ISO/TC 22, Road vehicles, in Göteborg, Sweden. Having published over 700 standards – including more than 120 in 18 months – one of ISO's most active committees continues to meet rapidly evolving industry demand, with an increasing focus on electric and fuel-cell vehicle standards.

Close collaboration with the International Electrotechnical Commission (IEC) continues to be top priority, with several new work items under development. Publication of a grid communication interface is a recent example of this inter-organizational coordination. ISO is also working together with IEC to produce a compendium of electric vehicle standards developed by both organizations. This follows on the heels of an ISO publication on the same topic.

The impact of global automobile standards developed by ISO/TC 22 was put on full display at a guided tour of the Volvo Trucks Tuve Assembly Plant outside Göteborg. Some 70 countries are active in the work of ISO/TC 22 as members or observers.



National standards bodies from across the Caribbean, Central America and South America get to grips with good standardization practice, La Paz, Bolivia, May 2013.



Global automobile experts at the Volvo truck plant in Göteborg, Sweden.