

Press Release:

Ismaning, April 12th, 2018

PERFORMANCE DAYS® functional fabrics fair
produced by Design & Development GmbH Textile Consult
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PERFORMANCE DAYS presents lecture by Dr. Jan Beringer, Hohenstein Institute

Effective cooling with functional fabrics and textiles

What does an athlete absolutely need in the summer? Adequate cooling! If anyone thinks perspiration on bare skin is enough, they are wrong. The right clothing is a factor too. Dr. Jan Beringer from the Hohenstein Institute explains how functional fabrics can aid optimal cooling.

Sport-outfits must meet many demands. In the first moments when buying new clothing, athletes pay attention to comfort, fit, and freedom of movement. A much more important aspect, however, comes into play when actively engaged in the sport: the ability of the fabric to optimally exploit the cooling effect of sweat. The conditions that make this possible are explained by Dr. Jan Beringer.

PERFORMANCE DAYS: Mr. Beringer, sporting activities cause sweat and perspiration. Would an athlete cool down best if he didn't wear any clothing at all?

Dr. Jan Beringer: Quite the opposite. The right textile can even help the body cool down and thus regulate the temperature. Think about the effect that occurs when you're exposed to a draft of air while wearing a wet bathing suit - the areas of your body which have contact with the textile are significantly cooler. This is the so-called cooling by evaporation effect. Cooling by evaporation is extremely useful in order to avoid any overheating of the body. This process functions best when the athlete's sweat evaporates in the close-fitting sports textile. While human skin only provides a surface area of about 1.8 to 2 square meters for evaporation, a textile can achieve a surface of up to 100 square meters and thus provide greater and more effective cooling.

PERFORMANCE DAYS: Which parameters determine the cooling by evaporation qualities a textile provides, and is it measurable?

Dr. Jan Beringer: The attainable amount of cooling through evaporation / cooling conduction of a textile is dependent on the interaction of various factors: fibre type and cross-section, yarn construction, surface construction, finishing, color. These need to be optimally combined with one another to achieve the best cooling performance. In fact, we do have a measuring system at the Hohenstein Institute called WATson - Heat Release Tester. This measures the amount of cooling performance in watt per area, basically how effectively the textile can evaporate moisture.

PERFORMANCE DAYS: So which parameters does sportswear need to fulfil in order for it to cool optimally?

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Dr. Jan Beringer: The right fibre and, above all, a sophisticated fabric construction, can provide good cooling performance. The fibre should be capable of absorbing and dispersing moisture rapidly, and be able to release it quickly again, as is the case with chemical fibres, with polyester for example. When a fabric has a pronounced three-dimensional structure due to its surface construction, the evaporation surface is very large, and allows for a good cooling performance.

PERFORMANCE DAYS: Even if fabrics offer a good cooling performance - is that enough for more intensive training?

Dr. Jan Beringer: There is no straightforward answer to that question because many parameters play a role here. But I am confident that we'll be able to express a clear statement on that issue after completing our research project. Humans rate thermal sensation as comfortable when heat production and heat loss are well-balanced, like with a scales - and naturally when body temperature is within a normal range (slightly less than 37°C). A little above- or below that will result in a sensation of overheating or freezing. Sporting activity produces a lot of body heat. Then add to that the local temperature. On the other side of the scale we are dealing with heat release, and this occurs physically through several parameters: Convection, conduction and radiation, i.e. heat conduction and heat radiation, but above all, through the warmer climatic conditions through evaporation, i.e. the evaporation of our sweat. This is the most important parameter we have to keep in mind with regard to summer sportswear that rests on the skin. The cooling performance through evaporation in the textile is therefore the most effective method. Though, it should be noted: The more you sweat, while wearing the right textile, the more cooling by evaporation, or cooling itself will be produced.

The lecture by Dr. Jan Beringer will be presented on Thursday, April 19th 2018 at PERFORMANCE DAYS. In his lecture titled "**Cooling fabrics - tested, approved, and working**", the chemist explains not only the thermo-physiological basis of the cooling process, but also the methods by which the cooling performance of the fabric can be verified. The unique measuring device called WATson, developed at Hohenstein, will also be on exhibit.

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You won't want to miss this important trade fair in the world of functional textiles: Save the following calendar dates for 2018:

- **PERFORMANCE DAYS (Summer 2020 Kick-off Collections) on April 18-19, 2018 - last time at MTC, Taunusstraße 45, Munich**
- **FUNCTIONAL FABRIC FAIR powered by PERFORMANCE DAYS on July 23-24 at Javits Center, New York, USA**
- **PERFORMANCE DAYS (Winter 2020/21 Kick-off Collections) November 28-29, 2018 - first time at Messe München, Munich-Riem**

About PERFORMANCE DAYS

PERFORMANCE DAYS – The “functional fabric fair” launched in 2008, is the first and only event created especially for functional fabrics for sports and work clothing. The aim of the semi-annual trade fair is to give leading and innovative textile manufacturers, suppliers and service providers the opportunity to present their functional fabrics, membranes plus treatments, laminates, paddings, finishes, and accessories such as yarns, tapes, prints, buttons and zippers.

The industry experts who come to this fair - the sports fashion designers, product managers, and decision-makers (see online: [Visitor List](#)) represent almost every European active clothing and functional wear manufacturer - can find a complete selection of high quality materials available at just the right time in April/May and November. The dates are intentionally scheduled early thanks to our expertise in functional fabrics and are optimal for summer and winter sport collections. (All trade fair catalogs from past events are available online at [Catalogs](#) as well as a listing of current exhibitors at [Exhibitor List](#)).

The relaxed and focused workshop-like atmosphere at PERFORMANCE DAYS differentiates it from the other fairs which are often unmanageable and more stressful. That is one of the reasons why the Munich trade fair at the heart of the European sportswear industry has become one of the top addresses for new fabrics, innovations, and is the preferred meeting place to conduct business.

In the unique [PERFORMANCE FORUM](#) of PERFORMANCE DAYS, the visitor receives an inspiring and well-grounded overview of the new materials, trends, and innovations of the exhibitors. The [PERFORMANCE AWARD](#) and the [ECO PERFORMANCE AWARD](#) are also presented here.

Qualified guest speakers present special topics and their collaborative ventures in guided tours, workshops and presentations to complete the range of information provided at PERFORMANCE DAYS within the [Program](#) (see after the fair online in the [Presentation Library](#)).

No entry fee and free admission to all events for industry visitors.

Detailed information and advanced registration online at: www.performancedays.com