

Remarkable progress has been made in surface wettability & icephobicity. However, it remains a challenge to preserve the efficiency of this functionalization in the long term. Promising designs require a good understanding of the interfacial dynamics between water and substrate. Nature provides us with valuable inspiration for this.



Bharat Bhushan
The Ohio State University



Patrik Hoffmann
Empa



Markus Varga
AC2T research GmbH



Rainer Kling
Berner Fachhochschule

Our experts address the state of the art and its growing application in the e-mobility, aerospace, energy generation & transmission sectors as well as in various high-tech products.

The event is aimed at product and component manufacturers, design engineers, process engineers & business developers who want to learn about current & future opportunities for intelligent product and process concepts.

Monday, 24 June 2024, 13.45 - 17.00 h

Materials IQ Workshop: «Novelties in wetting: wettability, anti-icing, a never ending story?»

Empa, Feuerwerkerstrasse 8, 8820 Thun

 **Materials IQ[®]** Partners:

Association NTN Innovative Surfaces
Lagerstrasse 14 | Chemin des Verdiers 4
CH-8600 Dübendorf | CH-1700 Fribourg

Network Partner:



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Empa, Feuerwerkerstrasse 8, 8820 Thun

Registration mandatory

www.innovativesurfaces.ch/events

Participation fee

Members assoc. NTN Innovative Surfaces free of charge
Non-members CHF 90.-, cancellation fee
after 18 June 2024 CHF 40.-, excl. Mwst.

How to get there with public transports

From Bahnhof Thun with STI-Linie 4 until
bus stop «Waldeck».

[Hier gehts zum Fahrplan](#)

How to get there by car

Autobahn A6, Ausfahrt «Thun Süd».

Only a limited number of parking
spaces available.



Our experts provide insights into new technologies and innovative industrial applications. There will be room for discussion with the experts on the integrability, reliability and costs of technologies as well as innovation ideas and possible business models.

13.00

General assembly 2024 Association NTN Innovative Surfaces

Dr. Andreas Hafner, Innovative Surfaces

Dr. Jörg Güttinger, Innovative Surfaces

Everyone is welcome

13.45

Welcome to the workshop

Prof. Dr. Patrik Hoffmann, Empa

13.50

Lessons from Nature: Bioinspired Mechanically Durable and Self-healing Superliquiphilic/phobic Surfaces

Prof. Bharat Bhushan PhD, The Ohio State University

14.35

Structured or slippery flat surfaces – which way to go?

Prof. Dr. Patrik Hofmann, Empa

15.00

Labtour: “Advanced Materials Processing Lab, Empa” (2-3 groups)

16.00

Effect of micro-texturing on the wettability of tribological surfaces

Markus Varga, AC2T research GmbH

16.25

Laser generated nanostructures inspired by nature

Prof. Dr. Rainer Kling, Berner Fachhochschule

17.00

Concluding remarks followed by apéro

Overall, the durability of surfaces with special functionalities in nature is a result of their intricate structural designs, material properties, and adaptation to environmental challenges through the process of evolution.

Keywords: water and oil attraction and repulsion, hierarchical structures, multiple length scales, maintenance, repair mechanisms, anti-fouling, anti-smudge, optical transparency, anti-fogging, anti-icing.