

Foundation of the **German-Swiss Association for the Properties of Water and Steam (GSAPWS)** on April 1, 2022, in Potsdam, Germany.

On 1 April 2022, 13 delegates met in Potsdam, Germany, for the founding meeting of the German-Swiss Association for the Properties of Water and Steam. This meeting was also the first in-person meeting of the German and the Swiss National Committees since the start of the Covid-19 pandemic.

The meeting was held at the invitation of Prof. Dr. Hans-Joachim Kretzschmar, Chairman of the IAPWS German National Committee, Mr. Michael Rziha, Vice Chairman IAPWS PCC WG, and Mr. Tapio Werder, Secretary of the Swiss Committee for the Properties of Water and Steam.

The meeting took place at the Helmholtz Centre Potsdam, German Research Centre for Geosciences, Section 4.8 – Geoenergy, hosted by Dr. Harald Milsch and Ulrike Hoffert.

Annual Meeting 2022

After the official welcome by the President of the IAPWS German National Committee, Prof. Dr. Hans-Joachim Kretzschmar, the host of the conference, Dr. Harald Milsch, introduced to the delegates the scientific activities at the Geoenergy Institute. Geothermal (urban) heat supply, thermal storage (underground warmth and cold storage in cities), and geological storage (carbon capture storage and utilization (CCS/U) as well as hydrogen storage) were discussed and further activities at the campus were explained.

The annual meeting continued with two presentations held by two delegates of the German National Committee. In the first presentation, Dr. Robert Hellmann, Helmut Schmidt University Hamburg, Germany, discussed the thermophysical properties of gaseous mixtures with steam based on fully predictive theoretical calculations. Dr. Hellmann is the 2021 IAPWS Helmholtz Award winner – the award is given yearly to a qualified researcher who, at the time of the nomination, is at most 15 years past the time of receiving his or her last earned degree. The purpose of the award is to recognize promising early-to-mid career scientists and engineers who are making significant contributions to or defining new directions in the areas of research of interest to IAPWS.

The second presentation was held by Prof. Dr. Roland Span, Ruhr-Universität Bochum, Germany. His presentation was titled "Building bridges between property models formulated in Gibbs and Helmholtz energy." Multi-parameter empirical equations of state for pure substances have been formulated in terms of the reduced Helmholtz energy since the 1980s. In the 1990s, the successful transfer of this approach to mixtures began. Semiempirical models formulated in terms of Gibbs enthalpy as a function of pressure and temperature are widely used, primarily in process engineering applications and in the field of geosciences. Due to the different independent variables and different reference models, the two groups of models cannot be easily combined. In recent years, however, several papers have shown that electrolyte models in the form of Gibbs energy can also be used in combination with mixed models in the form of Helmholtz energy. Potentially, this opens up a multitude of new applications, for example in the fields of geology and high-pressure process engineering, but also in seawater desalination. The lecture explained the basics of the new ways of thinking and showed first results for chemically reacting mixtures and for mixtures with salt varnishes.

Founding Meeting

After the introduction, the two presentations, and a short break, the official founding meeting of GSAPWS started. First, Hans-Joachim Kretzschmar read an obituary of Dr. Javid Safarov. Dr. Safarov

had passed away unexpectedly on March 27, 2022. The delegates observed a minute's silence in memory of the late member of the German National Committee of IAPWS.

A discussion followed regarding the necessity of founding the new joint association. Hans-Joachim Kretzschmar and Michael Rziha summarized the latest developments in both the German and the Swiss National Committees and the reasons to start a joint German-Swiss Committee. The founding meeting was held according to the rules and procedures of German Law. As a final outcome of the meeting, the German National Committee together with the Swiss National Committee officially founded the German-Swiss Association for the Properties of Water and Steam (GSAPWS).

The following individuals were unanimously elected by all members of this inaugural meeting:

- Chairman of GSAPWS, Prof. Dr. Hans-Joachim Kretzschmar
- Vice-Chairman of GSAPWS, Michael Rziha
- 1st Deputy, Prof. Dr.-Ing. Karsten Meier
- 2nd Deputy, Tapio Werder

In the next step, the statutes of GSAPWS will be submitted to the responsible tax office for confirmation of the non-profit status. This will be followed by the official registration of the new association in Dresden, Germany.

This formation of the new GSAPWS will help to strengthen the activities and work for and with IAPWS within the German-speaking countries. It was also needed to guarantee a continuous, solid financing in the future. The former individual national committees from Germany and Switzerland will be dissolved, and will be integrated in this common GSAPWS from now on.

The next Annual Conference and Assembly of GSAPWS will be held in Hinwil near Zurich, Switzerland, on April 21, 2023.

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