

iVTH Newsletter

Dear members, friends and supporters,

The number 13 has per se a bad reputation and is often regarded as an unlucky number. As was demonstrated in Hamburg, however, this is not necessarily the case, as 13 can also be a lucky number: With fruitful discussions, many new contacts, informative presentations and around 375 participants from 31 nations, the organizing team from the Fraunhofer WKI and the European Panel Federation (EPF) can look back on an extremely successful event. The Symposium was supported by Hywax and the iVTH. The conference venue was, once again, the Grand Elysée Hotel in Hamburg.

In addition to the possibility of networking, the participants from industry, science and associations were, of course, also offered a multifaceted program of presentations. Two impressive evening events and an accompanying technical and poster exhibition made the program complete.

This year's Symposium brought together a particularly large number of participants, which was reflected in the fact that all the available places were taken and it was actually necessary to create a waiting list. In the future, please utilize the opportunity to register early, regardless of whether you are an exhibitor or participant. Members of the iVTH can also register for the next Symposium at a reduced participation fee. The date for the next symposium in 2026 was announced during the event. You can remain constantly up-to-date via our website www.ivth.org or directly via the event website www.european-wood-based-panel-symposium.org.

We would now like to conclude our newsletter with a look back at the 13th European Wood-based Panel Symposium. We hope that you enjoy reading it, and we are already looking forward to seeing you again in Hamburg. The date has already been set: 14th to 16th October 2026 - Save the date!

Your iVTH Team

Topics

Look back |

- 13th European Wood-based Panel Symposium 9 - 11 October, 2024 in Hamburg, Germany

Events

- **14th European Wood-based Panel Symposium**
14 -16 October 2026,
Hamburg, Germany

more information:
www.ivth.org/termine



The fully occupied event hall at the Grand Elysée Hotel Hamburg was once again an impressive sight on both days of the event.

Review of the 13th European Wood-based Panel Symposium in Hamburg

The majority of guests had already arrived on the evening before the Symposium in order to punctually attend the welcome party, which was made possible through the generous support of the exhibitors and sponsors.



More than 300 participants attended the welcome evening, much to the delight of the organizers (from left: Rainer Marutzky (iVTH), Kris Wijnendaele (EPF), Raoul Klingner (Fraunhofer WKI), Alen Bukvic (Hywax GmbH) and Harald Schwab (Fraunhofer WKI)).

Despite the ballroom being completely full, an expectant silence nevertheless descended as Kris Wijnendaele (EPF) began his welcome address on the first official day of the event. With the title "Innovation Symposium", he directly indicated the focus of the presentations. The audience was also eagerly awaiting the successor to Bohumil Kasal, who went into retirement at the end of September. Raoul Klingner introduced himself as Acting Director of the Fraunhofer WKI and warmly welcomed the guests.

With a total of 20 presentations, a comprehensive selection of current topics was addressed. These ranged from market developments and raw-material issues, through artificial intelligence and recycling, and on to adhesives. Information regarding new regulations on formaldehyde emissions from wood-based materials was also discussed.



Philipp Sprockhoff, EGGER Holzwerkstoffe Wismar GmbH & Co KG and EPF Board Member, opened the first presentation session.

Traditionally, the Symposium begins with the **economic situation of the European wood-based materials industry**. Philipp Sprockhoff, EGGER Holzwerkstoffe Wismar GmbH & Co KG and EPF Board Member, provided an overview in this regard. In 2023, there was a sharp decline in production, but the outlook is promising, so no further decline is expected. The need for more living space and its furnishings and fittings offers considerable sales potential for wood-based materials, as does renovation. In Germany alone, 200,000 dwellings are needed; if, however, the construction industry does not receive a stimulus, this will have consequences for the entire economy, according to Mr. Sprockhoff. Regulations on formaldehyde emissions from wood-based materials also continue to concern the industry. Mr. Sprockhoff emphasized that although the association does not reject regulations in principle, they must, however, be fair. The circular economy and recycling form the foundation of the industry and do not have to be initially learned from the EU's Green Deal. His statement on the topic of sustainability reads: "This is why our company was founded more than 60 years ago. This is why we exist". A clear goal of the industry is "zero CO₂ emissions". But even more critical than CO₂ emissions is the supply of raw materials. Here, Mr. Sprockhoff called for a coordinated approach, and the burning of wood is a no-go in any case. With an optimistic view of the future, his request was: "Let us adapt to change", thereby referring to Stephen Hawking's quote "Intelligence is the ability to adapt to change".

Thomas Walther from AFRY Management Consulting (Deutschland) GmbH addressed the question of **trends in the wood-based materials industry**. He confirmed that the economic situation had improved a little. Outside of Europe, the APAC countries India (the sleeping giant) and Vietnam represent a large market potential, while in Africa, for example, the influence of China is strong.

From the perspective of trade and sustainability, David Svensson, IKEA Supply Services (Sweden) AB, shed light on the future requirements for wood-based materials. This can be briefly summarized as “recycled, renewable, bio-based and energy-efficient”. When asked by the audience what the European wood-based materials industry could learn from IKEA: **“Working together is the key!”**. With this statement, Mr. Svensson also touched on an aspect of the subsequent presentation.



David Svensson (above) and Max Roggemann made a joint appeal, from differing perspectives, for the wood-based materials industry to demonstrate solidarity.

As a **timber trader**, Max Roggemann (Enno Roggemann GmbH & Co. KG) expressed his **wishes for the wood-based materials industry**. One important aspect for customers is the reliability of prices, but the real problem is presented by price fluctuations. As is well known, prices are created through supply and demand. It is, however, difficult to predict demand; this was clearly evident during the COVID-19 pandemic. Traders want supply chains to be constant and reliable. Mr. Roggemann thereby delivered a clear message to the timber industry: The timber sector needs a better image, especially among young people and with regard to the search for employees and the shortage of skilled workers. The headhunting of employees was criticized particularly harshly. As a way out of this dilemma, Mr. Roggemann referred to dual studies, for example. Politicians also need to be informed via simple messages. It is unfavorable for the external image of the sector that the wood-based materials industry is only concerned with itself and generally only communicates detailed issues to the public instead of communicating that **wood panels “are good and sustainable per se”**. More solidarity was encouraged here, rather than maligning competitors’ products.

ARTIFICIAL INTELLIGENCE – artificial intelligence has been making its way into many areas of everyday life for some time now. And people are not always aware of this when digital assistance is called upon to help. But how is it looking in the wood-based materials industry?

The AI development team Haidin Rashid Amin and Adrien Hitz from AHX.ai LTD demonstrated the possibilities of **real-time AI for the fully automated production of wood-based materials**. AHX.ai - Manufacturing Intelligence Company is a London-based technology company founded by the two speakers. The two AI experts with degrees from Oxford University and Imperial College London specialize in industrially applied AI for real-time prediction in particle board, OSB, MDF and insulation plants. Amongst other things, the company thereby aims to increase productivity and the effective utilization of raw materials whilst guaranteeing data protection. However, AI is only as good as the accuracy of its models, which is why transparent assessment is a key factor in AI application in real time.

How is artificial intelligence (AI) changing the wood-based materials industry? Daniel Schwartze and Jürgen Woll from wood-based materials technology provider Dieffenbacher GmbH presented the opportunities, challenges and prospects.



Jürgen Woll (left) and Daniel Schwartze gave a presentation on AI in the wood-based materials industry.

Against the background of a shortage of skilled workers, unplanned plant downtimes, varying process conditions, quality fluctuations and cost optimization, the developed digital platform EVORIS offers an AI-supported solution. In addition to the optimization of the production process, this involves the prediction of plant and product parameters as well as plant monitoring. For this purpose, EVORIS collects, stores and processes the data of an entire plant, thereby supporting PCs or mobile end devices by processing the information in apps. The anomaly detection for woodchip size was cited as an application example. Is deep learning transferable to the wood-based materials industry? In response to a question from Tunga Salthammer from the Fraunhofer WKI, the speakers explained that the initial data would have to be correct and physical information would have to be updated. The ultimate goal of the implementation of AI is autonomous operations management.



Gregor Bernardy (left) and Oren Yahav.

From vision to reality: Gregor Bernardy (Siempelkamp Maschinen- und Anlagenbau GmbH) and Oren Yahav (Smartech Manufacturing™ Technologies) also focused on the autonomous, self-optimizing **wood-based materials plant based on AI and machine learning (ML)**. How can the “Cost – Productivity – Quality” triangle be optimized based on value? The speakers showed that the application of AI and ML does not lead to an autonomous process that is simply provided with data and then learns independently. In reality, a process-oriented preparation of the data, the recognition of incorrect data (anomalies) and the correct understanding of the process are required in order to be able to evaluate dependencies and correlations. According to the speakers, it is only through the involvement of humans, their experience and decisions that AI and ML models can be enabled to make optimized decisions in order to execute the process autonomously. And what influence does recycled wood as a raw material for panel production have on the model? According to the speakers, a number of experiments are necessary (5 to 10 runs) to ensure that sufficient data is available for the AI.

Without **recycling**, the sector would lack an important resource. The speakers in this session addressed the topic and focused on medium-density fiberboard (MDF). **Are solid-wood waste and post-consumer fiberboard suitable as alternative raw materials for MDF production?** Marco Mäbert from IHD Dresden gGmbH explored this question. The research work presented included waste-wood processing and the production of wood

chips from pre-shredded category A 1 waste wood and MDF waste. Particular attention was paid to the TMP laboratory plant, which has been modified for waste-wood pulping. The aim was to produce high-quality pulp from waste wood and MDF waste at standard industrial throughput times. The industrial partners were able to successfully produce MDF, HDF and insulation material from the obtained material.

Joachim Hasch (SWISS KRONO Tec AG) expressed his criticism of MDF recycling. He spoke of “recycling for its own sake” and whether it would not make more sense to utilize old MDF thermally. In reply, Mr. Mäbert referred to the current EU project “EcoReFibre”, within the scope of which an LCA study is planned that will provide information on this issue.

Luca Ballarin (PAL S.r.l.) addressed the question of the **economic application of MDF recycling**. With more than 100 million m³ of MDF sold globally every year, medium-density fiberboard is a successful model that has continuously evolved over the course of its 60-year history. In the opinion of the speaker, however, the recycling of MDF is a problem that has not yet been sufficiently solved. This includes, firstly, the defibration process of the different waste materials and, secondly, the cleaning of the fibers. Energy-efficient solutions have been found for both processes by the companies PAL S.r.l and MDF Recovery (MDFR), enabling recycled fibers to be produced. According to Mr. Ballarin, the costs are only half of those of virgin wood fibers.

Clemens Seidl from Andritz AG in Graz reported on the construction of a **flexible MDF plant**. An important aspect of panel production is consistent, controllable panel quality with a competitive cost structure. This is countered by, for example, changing qualities in the raw-material supply with an increasing proportion of recycled material, personnel fluctuations, customer-specific systems and changing customer requirements. In such a dynamic production environment, an effective control system must be able to deal with fluctuations.

The system presented by Mr. Seidl is based on three pillars: recording changes (e.g. raw material, intermediate products), flexible equipment (must react to changes, adapt) and quality monito-



The hosts and the majority of the speakers at this year's symposium.

ring (continuous monitoring and optimization according to the desired quality). Mr. Seidl presented digital software that collates the entire data on a server and utilizes an array of smart tools for the application of digital solutions – Digital wood, MDF-Eye, Digital Glue – along the path towards an efficient, increasingly autonomous plant. Regarding the limits of AI in MDF production, Mr. Seidl said that wood is the most important raw material, including recycled material, and the repeatability of the processes must be guaranteed.



Clemens Seidl presented new software designed to pave the way for efficient, increasingly autonomous systems.

Could the profitability achieved by using **recycled wood** to manufacture **particle boards** be jeopardized by the increasing proportion of fiberboard in the recycling assortment? In order to obtain information on this, the team led by Mark Irlé from the École Supérieure du Bois in France investigated the occurrence of fiberboard in French waste wood. The study forms part of the aforementioned EU research project EcoReFibre. A further aspect here is the removal of the fiberboard components in the recycling mix and their use, as well as possible contamination of the recycling fibers.

The presentation given by Chihiro Kayo (Tokyo University of Agriculture) offered a look beyond the borders of Europe towards Japan. It is well known that wood products store carbon and can therefore serve as a countermeasure to climate change. In this context, Ms. Kayo reported on **a study on particle board and fiberboard from Japan**. Their use has increased worldwide. Furthermore, carbon storage is being extended, as waste wood is also used in the production of these wood-based materials. In order to estimate the carbon storage in particle board and fiberboard as well as the annual change in Japan over the last 70 years, the researchers applied three methods from the IPCC guidelines (Intergovernmental Panel on Climate Change). The results showed differences, whereby the "Tier 3" method yielded the highest estimation accuracy.



Chihiro Kayo reported on a study in Japan on the carbon storage of wood-based materials over the last 70 years.



Firmly scheduled and sufficiently long breaks offered countless possibilities for networking. Many new contacts were made and interesting discussions were conducted.

A highlight of the symposium was the subsequent evening reception hosted by Hywax. This took place in Hamburg's Millerntor stadium in St. Pauli. Here, the participants enjoyed the evening in a relaxed soccer atmosphere with plenty of conversation, good food and varied music until long after midnight.



An impressive atmosphere in the Bundesliga stadium.



Two table-soccer tables and actual table-soccer professionals ensured additional entertainment and a wonderful variation on this entertaining evening.



A great atmosphere at the opening of the evening event. Hywax once again had the right instinct when choosing the venue. From left: Fabian Meinker, Alen Bukvic (both Hywax GmbH), Harald Schwab and Raoul Klingner (both Fraunhofer WKI) and Marc Pruesmann (Hywax GmbH).



Andreja Kutnar opened the second day of the event with her presentation on the flame retardancy of wood.

The first session on the second day of the event began with a contribution from Slovenia. "Every year, 10 billion tons of concrete are used worldwide and global warming is increasing rapidly. Slovenia is warming up faster on average than mainland Europe." One possibility for tackling the problems is: **"We need to use more wood! But how?"**. Andreja Kutnar, Head of InnoRenew CoE and Professor at the University of Primorska, highlighted the opportunities and challenges involved in the utilization of this renewable raw material and specifically addressed the flame retardancy of wood as well as the associated standards and requirements. The case study concerning the discoloration of oak veneer on flame-retardant MDF used as wall cladding in a hotel raised the question of who bears responsibility in such cases. This highlighted the importance of collaboration and communication as well as the availability of data. In addition, the need to invest in research and development in order to improve the quality of wood and wood-based materials and to protect them from a bad image was emphasized.

RESINS - In this session, various aspects relating to adhesives in the application area of wood and wood-based materials were presented. In addition to the change in the raw-material mix with an increased proportion of recycled wood, the binder can also have an influence on the physical properties of the wood-based materials produced and, consequently, on their quality. In this

context, Fabian Meinker from Hywax GmbH in Hamburg gave a presentation on **hydrophobing agents for particle-board production using bio-based adhesives**. The growing demand for bio-based adhesives, the legal requirements and, ultimately, the board quality provide the reasons for the research activities in this area.



The program was structured to allow for questions and discussions directly after the presentations. Fabian Meinker (above) in conversation with Tunga Salthammer (Fraunhofer WKI).



The audience actively participated with questions and discussions on a wide range of topics.

In laboratory tests, it has been possible to demonstrate that **customized synthetic dispersants** improve the swelling properties of particle boards bonded with bio-based adhesives from various manufacturers. The newly developed hydrophobing agents are, however, also suitable for traditional binders. On the subject of cost-effective bio-based products, Tunga Salthammer pointed out in the subsequent discussion that “cheap” is not necessarily advantageous, as “cheap” protein-based adhesives can release ammonia.

Markus Jonsson from the Swedish company Sunds Fibertech AB described his presentation as a **revolution in adhesive injection**. Current blowline mixing systems typically require steam injection during MDF production and are extremely maintenance-intensive, according to Mr. Jonsson. They call their newly developed concept “the concentric flow principle”. At the heart of this is a special nozzle in the blowline. Through extremely high turbulence and strong mixing, the adhesive requirement for industrial applications should be reduced by 5 to 15 %.

In addition to the specialist presentations from the industry, research also had its say. Steven Eschig from the Fraunhofer WKI in Braunschweig, in collaboration with Christin Koch (University of Kassel) and various industrial partners, is developing a **bio-based, switchable polyurethane adhesive for surface bonding**. The aim of the joint project “AdHoMe”, which is funded by the BMEL via the Fachagentur Nachwachsende Rohstoffe e. V., is the development of a more than 60 percent by mass bio-based, switchable PU surface adhesive for the **production of reshapable wood and hybrid wood-metal laminate composites for applications in the mobility sector**. The adhesive is thermally switchable via a reversible cross-linking mechanism and is based on a thermoreversible Diels-Alder reaction between furan and maleimide units. The cross-links can be cleaved by increasing the temperature so that the adhesive effect is deactivated. On cooling, the cross-links form again and the adhesive effect is activated. According to Mr. Eschig, the process can be repeated several times. The ideal joining conditions, such as pressure, duration and temperature, will be determined in the course of the project, but the shaping and forming of wood composite materials also play an important role in various areas of application. It has been demonstrated that forming from 2D to 3D wood structures is possible by selectively switching the adhesive on and off. The developed adhesive exhibits both thermosetting behavior and thermoplastic properties; this relatively new polymer class belongs to the vitrimers.

A further contribution from the Fraunhofer WKI addressed the **impregnation and bonding of hybrid wood-based materials for automotive bodies**. Moira Burnett made it clear in her introduction that the automotive industry is mainly concerned with CO₂ savings in the search for alternative raw materials. In the research project, in collaboration with the University of Kassel and a development company, the extent to which wood substrates are changed by a cathodic dip-coating process (CDP) is to be investigated. The compatibility between wood, adhesive

and dip baths must thereby be guaranteed. The process must not impair the properties of the composite and, at the same time, the composite must not contaminate the baths through detached wood fibers. The idea of the project is to develop hybrid aluminum-wood composites that are suitable for use in the automotive sector. The wood components should, however, be treated with wood preservatives. The results of the tests show a negative effect of the CDP on the bonded wood-metal composites; however, the impregnation protects the bonded joint and prevents the penetration of moisture. According to Ms. Burnett, any cracks that occur can be compensated for by using an adhesive with a high strain rate.



Steven Eschig delivered a presentation in collaboration with Christin Koch.

The focus of the presentation given by Ralph Lunkwitz from BASF SE was on **sustainable amino resins**. As an introduction, Mr. Lunkwitz looked back at **Hans Carl von Carlowitz**, who first mentioned the term **sustainability** in connection with **forest management in 1713** - a term that seems to be used in all areas of life today. So it is questionable whether its use makes sense in all areas of life. Nevertheless, it is important to deal with this issue. With the keywords "Rethink, Recalculate, Reform", Mr. Lunkwitz then presented strategies for a long-term reduction in the product carbon footprint (PCF). PCF refers to the balance of greenhouse-gas emissions over the entire life cycle of a product. As an example of how these emissions can be reduced, renewable raw materials are used for the creation of intermediate products in the production of amino resins, and renewable energies are utilized.

Formaldehyde - the "Never-Ending Story": this substance had to be talked about again. Bettina Meyer (Fraunhofer WKI) and Sandro Ciroi (CATAS SPA) explained the reasons for this in their discussion on **"10 important facts you should know about the new European formaldehyde regulations (REACH)"**. Interesting facts about the European formaldehyde regulations were thereby presented in a well-structured and comprehensible manner. The following is a brief summary of some of the facts:

- REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals; the Chemicals Act came into force in 2007.
- A new EU regulation was signed in July 2023 and is due to

come into force for wood-based materials and furniture in August 2026, and for vehicle interiors in August 2027.

- The limit value for formaldehyde will then be 0.062 mg/m³ for wood-based materials, furniture and vehicle interiors, and 0.080 mg/m³ for other products.
- The test conditions for the chamber method are described in REACH Annex 14, but not for important details such as chamber volume, narrow-edge sealing, air velocity.
- The "CETPC TG REACH" working group set up by various European testing institutes is preparing a position paper intended to clarify detailed questions on the chamber method. Furthermore, the ECHA, in collaboration with industry, experts and testing laboratories, will develop a guideline for measuring formaldehyde release in order to specify the test parameters for the chamber method.
- And what effect will the REACH requirements ultimately have? The new EU regulation will – taking into account the transitional phase – be legally binding. For Germany, this means that the Chemicals Prohibition Ordinance will be amended and the "Formaldehyde" entry will be deleted.
- The new EU regulation will then apply to all formaldehyde-emitting products, not just wood-based materials.



Dialogue instead of a presentation: Bettina Meyer and Sandro Ciroi interviewed each other and skillfully conveyed current facts.

Online measurement of formaldehyde emissions using in-situ laser spectroscopy: Manuel Fleisch presented the latest developments from Fagus GreCon Greten GmbH & Co. KG from Alfeld in Lower Saxony. The background to this is that the limited volume of available laboratory test data often prevents precise process control in the production of wood-based materials. This applies in particular to formaldehyde emissions, as a result of which the potential for the optimization of processes and costs remains untapped. The presented measurement method evaluates the emission of the boards directly during the production process by providing a real-time prediction of the product emission. An in-situ infrared laser analyzer, which is installed in the extraction system of the diagonal saw, represents the core element of the method. The analyzer measures the formaldehyde concentration by detecting the attenuation of light, which should be proportional to the formaldehyde present in the air stream. The concentration measured during the manufacturing process is then correlated with the laboratory values. Due to the influence of e.g. panel thickness and density, a statistical analysis is performed.

med in order to refine the raw data obtained. Once validation has been completed, the method should, according to Mr. Fleisch, enable real-time determination of formaldehyde emissions during ongoing production, thereby offering numerous advantages.



Manuel Fleisch in conversation at the accompanying technical exhibition. This took place parallel to the Symposium. New contacts were also established during the poster session. Here too, a correspondingly extended break between presentations provided the best conditions for networking.



In addition to the presentations, scientists and companies also showcased their research results and products during a **poster session**, which, like the accompanying **technical exhibition**, took place parallel to the Symposium. Twelve companies provided information on their products at the exhibition and also supported the welcome evening as sponsors.

At the end of the conference, the organizers expressed their thanks for the excellent organization and the interesting presentations. While the event was still in progress, they announced the date for **the next Symposium**. We at the iVTH are also very much looking forward to seeing you again in Hamburg from the **14th to the 16th of October 2026**. Save the date!



In collaboration, the organizers announced the date for the 14th European Wood-based Panel Symposium, which will take place in two years' time.



The Grand Elysée Hotel in the center of Hamburg will once again be the contact point for the wood-based materials industry in 2026.

Remain informed at all times via the event website www.european-wood-based-panel-symposium.org or www.ivth.org.

New on **LinkedIn**

The iVTH recently joined LinkedIn. Here, in parallel to our website, social media users can access news regarding wood and other renewable raw materials.

The channel can be accessed at:
www.linkedin.com/company/ivth



Websites

- www.ivth.org
- www.wki.fraunhofer.de
- www.european-wood-based-panel-symposium.org
- www.linkedin.com/company/ivth

Imprint

Publisher:
 Internationaler Verein für
 Technische Holzfragen e. V. ivTH
 Riedenkamp 3
 38108 Braunschweig, Germany
 contact@ivth.org
 www.ivth.org
 Phone: +49 (0)531 2155 209

Managing Director:
 Prof. Dr. Rainer Marutzky

Editorial Team:
 Dr. Margitta Uhde
 Prof. Dr. Rainer Marutzky

Typesetting and layout:
 Manuela Lingnau
 Sarah Lippelt

Picture Credits:
 All Photos from page 1 - 9
 © Fraunhofer WKI, Photographer
 Patrick Lux

Photos page 10 © ivTH



Our sincere thanks go to all the exhibitors and sponsors who contributed towards the success of the 13th European Wood-based Panel Symposium:

