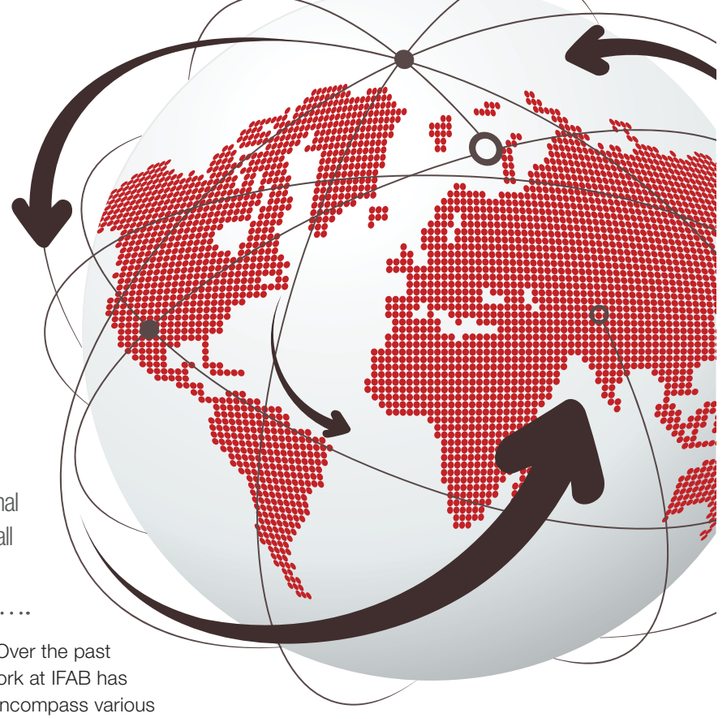

MIST-CONCEPTIONS AND REALITY

Max Lakkonen, Chairman of the Scientific Council, International Water Mist Association and Managing Director of IFAB talks all things water mist technology and its adoption by industry

Max Lakkonen has 20 years of engineering experience in fire protection. Holding a master's degree in mechanical engineering and a Technical Licentiate postgraduate degree in Automation, he currently serves as the Managing Director of the Institute for Applied Fire Safety Research (IFAB) GmbH, Germany, as well as IFAB Finland Oy. Max specialises in water-based firefighting, performance-based design, fire testing, and computational fluid dynamics. His typical work covers ventilation, water mist applications, tunnel fire safety, and especially industrial special hazards such as the protection of Lithium-Ion batteries. Max is a known lecturer in fire protection conferences and events and actively participates in various associations and standard committees, including the technical committees of NFPA750, NFPA130, and NFPA502, and ITA-COSUF Steering board. He holds the position of Chairman of the IWMA (International Water Mist Association) Scientific Council.

COULD YOU START BY TELLING US ABOUT YOUR BACKGROUND AND THE HISTORY BEHIND THE INTERNATIONAL WATER MIST ASSOCIATION (IWMA) AND ITS CORE MISSION?

My journey in fire protection began with a focus on water mist technology. With a background in academia, specialising in fluid power and high-pressure hydraulics, I found a natural transition into the water mist industry. Over the past decade, my work at IFAB has expanded to encompass various firefighting technologies, extensive research, and fire testing. Sometimes, I compare our work to that of "Mythbusters," but without the TV show. My previous academic career has provided a solid foundation, as fire problems fundamentally relate to physics and chemistry.

AS THE CHAIRMAN OF THE SCIENTIFIC COUNCIL, HOW DO YOU GUIDE THE IWMA'S RESEARCH AND TECHNOLOGICAL ADVANCEMENTS?

Taking over as Chairman after Professor Yu at FM Global is a big responsibility. The water mist industry has become well-known in fire protection, working effectively in many areas, and its use is growing. However, some companies or methods don't follow accepted practices, which is a challenge. Making sure everyone follows the right procedures is a major part of what the scientific council does. The council also helps with new research projects and topics. Since the council is made up of members from academia and research fields, it acts as a neutral group that can solve most technical problems or disagreements.

WATER MIST TECHNOLOGY IS AN INNOVATIVE FIRE PROTECTION METHOD. CAN YOU EXPLAIN ITS KEY BENEFITS COMPARED TO 'TRADITIONAL' FIRE SUPPRESSION SYSTEMS THAT USE OTHER AGENTS?

After three decades of existence and being widely utilised, water mist firefighting can also be regarded as traditional and firmly established from a historical perspective, especially since it holds almost 100% market share in certain applications. What makes water mist systems innovative is the clever way they utilise small droplets of water. This maximises the efficiency of water, making it the most effective coolant among all firefighting agents. Moreover, mist systems offer additional firefighting effects, such as local inerting when evaporated. The properties of mist systems can also be tailored by adjusting the size of the droplets, flow rate, and spray characteristics, with super fine mist suitable for protection of electronic equipment and coarser mist for environments like road tunnels, for example. The very wide range of application fields demonstrates the versatility of mist systems.

SAFETY STANDARDS AND REGULATIONS PLAY A CRUCIAL ROLE IN THE ADOPTION OF NEW TECHNOLOGIES. HOW IS THE IWMA WORKING TO INFLUENCE POLICY AND REGULATORY FRAMEWORKS FOR WATER MIST SYSTEMS?

IWMA represents the collective voice of the water mist industry, including academia, standard organisations, research institutes, manufacturers, insurers, and installers. Each member shares an interest in advancing this innovative technology. Many key members actively participate in various standard committees, some with IWMA mandates. Members also distribute information at the national level.

HOW DOES THE IWMA FOSTER COLLABORATION BETWEEN ACADEMIA, INDUSTRY, AND REGULATORY BODIES TO ADVANCE WATER MIST TECHNOLOGY?

IWMA serves as a communication platform, connecting academia, industry, and regulatory bodies. Moreover, IWMA actively promotes various research initiatives. Lastly, IWMA presents the "Ragnar Wighus Award" to recognise the best MSc and PhD theses focusing on mist systems. The call for submissions for the 2024 candidates is now open, with this year's award focusing on the best Master thesis.

THE IWMA ORGANISES AN ANNUAL CONFERENCE. WHAT ARE THE MAIN OBJECTIVES OF THIS CONFERENCE, AND WHAT CAN ATTENDEES EXPECT FROM IT?

The IWMA conference provides delegates with a comprehensive and engaging event that educates them on the latest trends, developments, and opportunities in the water mist industry. Simultaneously, the conference offers the opportunity to establish new professional connections and collaborations. Additionally, many organisations exhibit at the conference, further enhancing the value of the event.

COULD YOU SHARE SOME OF THE MOST SIGNIFICANT ADVANCEMENTS IN WATER MIST TECHNOLOGY THAT THE IWMA OR ITS MEMBERS HAVE BEEN INVOLVED WITH RECENTLY?

Identifying a single advancement proves challenging due to the widespread adoption of water mist technology across various applications. However, if one recent aspect must be mentioned, it could be water mist suitability in lithium-ion battery applications. Many IWMA members have conducted fire tests and demonstrated that water mist is highly effective across this rapidly expanding application field, including EV fires, battery production/recycling, and energy storage facilities, just to mention a few.

CAN YOU OFFER ANY ADVICE TO BUSINESSES OR FIRE SERVICES LOOKING TO IMPLEMENT WATER MIST TECHNOLOGY?

Water mist technology has sometimes been considered as technically complex, largely due to the reliance on manufacturer-related approvals. However, manufacturers now provide extensive coverage with various approvals. Despite certain drawbacks, the exceptional performance capabilities of water mist systems make them an interesting option for mitigating various hazards. My advice would be to discuss with experienced consultants or directly with manufacturers to assess the possibility of implementing water mist technology.

LOOKING TOWARDS THE FUTURE, WHAT ARE THE KEY CHALLENGES AND OPPORTUNITIES YOU SEE CHANGING THE FIRE INDUSTRY?

The fire industry's reluctance to change is a significant challenge. Progress here has been slower than in many other areas. We must adapt quickly to keep up with the rapidly changing world, developing new technologies and solutions. However, this often requires public investment, which can be a major obstacle. I believe water mist technology is one of the key technologies for future firefighting, but we can also enhance the use of digital tools and make all firefighting technologies smarter.

FINALLY, WHAT MESSAGE DO YOU WISH TO CONVEY TO INDUSTRIES STILL HESITANT ABOUT TRANSITIONING TO WATER MIST FIRE PROTECTION SYSTEMS?

For industries hesitant about switching to water mist fire protection systems, I encourage everybody to give it a chance. Commercial water mist technology has been around for 30 years and has shown great success in various uses. It's also a technology of the future because it's eco-friendly and extremely effective, don't get stuck in the past. **FB**

MAX LAKKONEN
CHAIRMAN, SCIENTIFIC COUNCIL
IWMA