

**PRESS RELEASE**

26 July 2019

**PIONEERING PROFESSOR IN HUMAN RESPONSE TO VIBRATION RELOCATES TO UK AS REACTEC’S CHIEF SCIENCTIFIC LIAISON**

Professor Setsuo Maeda, one of the world’s most respected experts in human response to vibration, has been appointed as Reactec’s Chief Scientific Liaison – relocating from Japan to Edinburgh for the role.

Reactec is the award-winning UK market leader in the provision of monitoring devices and powerful analytics for managing the risk of Hand Arm Vibration (HAV) – the cause of one of the most common industrial diseases in the UK, Hand Arm Vibration Syndrome (HAVS), also known as Vibration White Finger.

Professor Maeda has an impressive track record of academic achievement; has written many books and peer-reviewed papers and is regularly invited to speak at specialist events and conferences around the world on the subject. With a vision to fully understand and eliminate this debilitating industrial disease, he will continue his pioneering research working with the team at Reactec and Edinburgh Napier University to better understand the relationship between exposure to vibration and the progression of the disease [symptoms].

Earlier this year, Professor Maeda, Reactec and Dr Mark Taylor of Edinburgh Napier University published the findings of a joint research project on response relationships between vibration assessment on the human body and the human response to vibration in the International Journal of Industrial Ergonomics [\**see notes to Editors*].

The Professor has had an impressive career over forty years in the field of hand arm vibration research and holds doctorates in both engineering and medical science. The Professor is also a visiting professor at Nottingham Trent University [*see detailed biog in notes*]

**Jacqui McLaughlin, Chief Executive of Reactec** said: “*We are honoured to have Professor Maeda with us in this important role. The Professor is working with us to help progress the understanding of risk from exposure to vibration and how our wearable technology can help companies better address this risk. We hope that one day through collaborative research, that we can fully understand and eliminate this debilitating industrial disease*.”

Commenting on his appointment, **Professor Maeda** said: “*Throughout my career, I have been driven by the goal of fully understanding the effects of vibration on the human body and through research, to do what I can to ensure that we remove this industrial disease from being common place. I am passionate about my research and excited about my new role with Reactec and the strong partnership with Edinburgh Napier University*.”

# Launched in 2016, HAVwear is a wearable wrist device that monitors in real time an individual’s exposure to vibration when using power tools. Reactec’s Analytics provides cloud-based reporting which allows dynamic risk assessment and informs exposure risk reduction. This can help employers reduce the risk faced by a workforce using vibrating tools and in recent published research in the International Journal of Industrial Ergonomics\*\* the validity of wearable monitoring is demonstrated.” (\*\*see notes to editors for more).

HAVwear has enjoyed significant sales since its launch three years ago and is in use by a number of leading companies in the UK, including: British Airways, Murphy Group, Morgan Sindall, Balfour Beatty, the Environment Agency, Siemens and Babcock. Reactec is also targeting other industry sectors both in the UK, Europe and internationally.

\* Hand Arm Vibration Syndrome (HAVS), which is also known as Vibration White Finger, is one of the most common industrial diseases in the UK. The condition is usually caused by the prolonged use of power hand tools, whose vibrations can damage the blood vessels, nerves, muscles and joints of the hand, wrist and arm. 300,000 people in the UK suffer from the condition, for which there is no known cure, only prevention.

26 July 2019 -Ends-

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**Notes to Editors:**

**About Professor Setsuo Maeda**

* Setsuo Maeda was born in Osaka, Japan in 1952. He received his Bachelor of Industrial Engineering degree from Kinki University in 1975, and received Master of Engineering and Dr of Engineering degrees respectively, from University of Osaka Prefecture and received Dr of Medical Science degree in 2003 from Kumamoto University.
* He was research associate in Kinki University, Department of Industrial Engineering in 1978, where he was promoted as a lecturer and an associate professor in 1984 and 1995, respectively. He moved to National Institute of Industrial Health as a senior researcher in 2006. He was promoted as a Director of National Institute of Occupational Safety and Health in 2006. He was a visiting professor in Kanagawa Institute of Technology, Kitasato University, and Mie University from 2006.
* His current research interests include Human Response to Multi-Axis Vibration, Multi-modal perception, Gene Expression of Hand-Arm Vibration Syndrome and Wearable Technology for Preventing HAVS.
* He was a member of ASJ and INCE/J. Also, he was an expert of ISO/TC108/SC4 committee and a chairperson of ISO/TC108/SC4 in Japan.  He retired from Kindai University on 31st March 2019.  He moved to Edinburgh to continue his researches of Human Response to Vibration.  Now he is continuing his researches at Reactec Ltd as a Chief Scientific Liaison from 1st April 2019 and he became a Visiting Professor of Nottingham Trent University since 31st August 2018.

**About Reactec**

* Reactec is the award-winning UK market leader in the provision of monitoring devices and a management information reporting platform of Hand Arm Vibration (HAV) risk - the cause of one of the most common industrial diseases in the UK, Hand Arm Vibration Syndrome (HAVS) – also known as Vibration White Finger.
* Reactec’s Analytics Platform which includes the HAVwear is an automated solution for employers to monitor and manage vibration exposure risks. The HAVwear is worn on the wrist of the tool user and exposure and tool data is transmitted online to provide companies with digital reports of their workforce exposure to potentially harmful levels of vibration. This product has c.50% market share of HAV monitoring devices sold in the UK. [www.reactec.com](http://www.reactec.com) @reactec
* Reactec latest research into the relationship between the human response to vibration and measurements taken on the tool user can be found at [www.reactec.com/article/download\_new\_reactec\_white\_paper\_](http://www.reactec.com/article/download_new_reactec_white_paper_)
* An independent report by the IOM on the validity of the data produced by Reactec’s  HAVwear to inform a suitable and sufficient risk assessment –www.reactec.com/iom\_report

**What is HAV / HAVS?**

* Hand Arm Vibration (HAV) is the cause of one of the most common industrial disease in the UK, Hand Arm Vibration Syndrome (HAVS) – also known as Vibration White Finger – with estimates that over 1 million UK workers are currently exposed to vibration over the HSE limit (source: HSE).
* There is no cure for HAVS, there is only prevention (source: HSE).
* 2 million\* people in the UK are at risk of HAVs. But currently there are under 100,000\*\* using monitoring systems, around 5% (source: \*HSE \*\*Reactec).
* 42% rise in the number of ‘Hand Arm Vibration’ non-compliances recorded through 20,000 site inspections in 2016 (source: BSG).
* There are 300,000 people suffering from HAVS in the UK (source: HSE).
* 10% of manual tool workers will contract HAVS within 12 years when exposed at the exposure action value (HSE)
* Typical HAV exposure risk assessments underestimate impact for those most at risk by 76% (Reactec Analytics)
* Majority of RIDDORS related to illness are HAVS related (HSE 2018)

**\*\*The International Journal of Industrial Ergonomics**

* Objective of the report: recent Improvements in battery and accelerometer technology have allowed for the development of a wearable device for the purpose of assessing hand transmitted vibration.  The nature of a wearable sensor enables it to capture the effects different operator interactions have on transmitted vibration and address some of the limitations listed within Annex D of ISO 5349.The authors therefore seek to investigate the degree to which vibration exposure captured on the wearable sensor correlates with the human response to vibration as determined through temporary threshold shift (TTS) in vibrotactile perception.
* The test results demonstrate that the assessment of vibration transmitted to the tool operator using a wearable device of the proposed methodology is positively correlated with the human subjects’ response to vibration.  The research further demonstrates that the principle of a wrist worn wearable device as an indicator of HAVS health risk is valid and can address a number of limitations identified with the use of tool emission data. Utilising data from this technology it is apparent that reliance on conventional methods can significantly underestimate the risk faced by the most exposed individuals.
* For more information on this and to read the journal paper in full please go to: <https://www.reactec.com/assessing_correlation_of_human_response_to_vibration>