

Highly Cited Researchers Interview Report

Professor Somchai Wongwises, Department of Mechanical Engineering, King Mongkut's University of Technology Thonburi, Thailand

Ranking in the top 1% by citations for field and publication year in *Web of Science*, *Highly Cited Researchers* are leading the way in solving the world's biggest challenges.

Clarivate Analytics puts the spotlight on research in engineering with Professor Somchai Wongwises, Department of Mechanical Engineering, King Mongkut's University of Technology Thonburi, Thailand. Professor Somchai's research focuses on heat transfer enhancement. In this interview, he shares his thoughts on being named a *Highly Cited Researcher* in 2019.

Could you tell us more about your research?

My research focuses on heat transfer enhancement, or what we may call heat transfer augmentation or heat transfer intensification. Heat transfer enhancement refers to the application of basic concepts of heat transfer processes and fluid mechanics to increase the rate of heat transfer through a surface or system. Basically, heat transfer enhancement techniques are used to reduce thermal resistance either by increasing the heat transfer area or by creating turbulence of fluid flow.

The techniques that are used in my study can be classified as active and passive techniques. Active techniques require external power input for the process, but for passive techniques do not need any external power.

How did you decide to select this field of research?

As we know, energy is very important to our lives and that of all living organisms in the world. It seems to be the cause of all things going on around us. However, in order to transfer thermal energy from one medium to another, we need to use thermal equipment called a heat exchanger. In the world of energy, heat exchanger is of critical importance. A high efficiency heat exchanger leads to more energy savings and carbon dioxide emissions reduction. Heat transfer enhancement techniques can be widely used in the heating and cooling processes of many industrial and domestic applications. Usually, the main aim is to enhance performance and reduce the weight and size of heat exchangers. As a result, heat transfer enhancement in heat exchangers is very attractive but challenging for research and industry. That's the reason I have chosen to work in this area.

What would you say is the impact of your research on society, especially on the Thailand 4.0 objectives?

The Thailand 4.0 development plan is an economic development model that aims to relieve my country from several economic challenges that resulted from past economic models. This development plan is focused on 10 targeted industries, including next generation automotive, smart electronics, biofuels, bio chemicals, robotics, food, logistics, digital, and so on. But, if we go into details, we see that energy issues will be involved in all industries. So, in answer to your question, I think I alone don't have that much impact on the society and economy of the country. However, because I have strong cooperation with targeted industries, my research outcomes could more or less be part of the solution, especially in terms of refrigeration, air-conditioning and thermal system design. In addition, I could help to educate the workforce to enter these industries and serve our country.

Did you know that you are one of the most read and cited authors on the planet?

I have been informed that several of my papers have become Highly Cited Papers. I was also awarded the Thailand Frontier Author Award from *the Web of Science Group* (then part of Thomson Reuters) in 2015 and became one of the *Highly Cited Researchers* in 2017, 2018 and 2019. But I didn't know that I was one of the most read and cited authors on the planet.

What impact do you think being a Highly Cited Researcher will have on your future work and career?

Usually, I spend most of my time in teaching and research in my university.

As a *Highly Cited Researcher*, I think my work will be known to researchers outside Thailand. I am very glad that the research output conducted by a group of people from a small laboratory has been usefully applied for further research globally by many researchers. It reflects the academic strength of my university and my country and makes them more famous. Receiving this honor is a huge encouragement to keep me moving forward purposefully in research and development. I can say that being included in the *Highly Cited Researchers* list surely affects my future work and professional career.

What advice would you give to new and emerging researchers and scientists?

This is a very important question. Have you ever heard that 'Excellence is never an accident?'. This is very old proverb, but it is valid even today. In order to succeed, I think young researchers must do what they love and love what they do. They should be proud and consider that their research topics are important. They must be diligent, patient and very hardworking. They must have passion, not give up easily and learn from failures. Commitment is also important. Nothing can be completed without commitment. Honesty and ethic are also compulsory. Researchers must do their research honestly and ethically, share their knowledge and respect people. They must have friends, colleagues and mentors or more experienced researchers to give advice. They must think differently, out of the box, and look for multidisciplinary research topics. New researchers or scientists must develop themselves continuously.



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Professor Somchai Wongwises

Could you tell us about how *Web of Science* has helped you in your work.

Web of Science, previously known as *Web of Knowledge*, is a website which provides a collection of peer-reviewed, high-quality scholarly journals, published worldwide in sciences, social sciences, and humanities disciplines. I always use it in finding additional resources for my research and looking for the latest development in a specific area. I can check the rank of journals from *Web of Science*. I also used it to check the number of citations of my published papers. I can get new ideas from research papers resulting from my previous publications. The citation information is very useful because cited papers will be a guideline for our future research projects.

What do you like about *Web of Science*?

Web of Science can provide various search and analysis capabilities. It is a unifying research tool which enables us to obtain and analyze publication data in a timely manner. I like to see which papers of mine are highly cited and I will be very happy every time I see that my papers are cited.

Thank you so much, Professor, for taking the time for talking to us and answering all the questions with a lot of thought and insight. We wish you best of luck for the coming year.

Thank you very much.

HCR Recognition Year: 2017, 2018 & 2019

Professional Profile: <https://global.kmutt.ac.th/alumnus/prof-dr-somchai-wongwises>

Congratulations Prof. Somchai and thank you for taking the time to share your experience with us.

If you have a story you want to share with the Scientific and Academic community, we would love to hear from you.

Email: marketing.sea@clarivate.com

Highly Cited Papers, Highly Cited Researchers

Highly Cited Papers are defined as those that rank in the top 1% by citations for field and publication year based on work published and cited over approximately the last decade. Citation analysis identifies the authors who, in their respective fields, have published the greatest numbers of Highly Cited Papers. These authors are then officially designated as *Highly Cited Researchers*, in recognition of the extent to which their papers have supported, influenced, inspired and challenged other researchers around the globe. To see the full list of *Highly Cited Researchers* and read more about the selection methodology and other details, please visit <https://recognition.webofsciencigroup.com/awards/highly-cited/2019/>

About the Web of Science Group

The *Web of Science Group*, a Clarivate Analytics company, organizes the world's research information to enable academia, corporations, publishers and governments to accelerate the pace of research. It is powered by the *Web of Science* – the world's largest publisher-neutral citation index and research intelligence platform. Its many well-known brands also include *Converis*, *EndNote*, *Kopernio*, *Publons*, *ScholarOne* and the *Institute for Scientific Information (ISI)*. The 'university' of the Web of Science Group, ISI maintains the knowledge corpus upon which the index and related information and analytical content and services are built; it disseminates that knowledge externally through events, conferences and publications and it carries out research to sustain, extend and improve the knowledge base. For more information, please visit webofsciencegroup.com.

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