

**Nippon Yakin Kogyo Co., Ltd. and Osaka University Joint Research Paper  
Receives Best Paper Award from the International Institute of Welding**

Nippon Yakin Kogyo joint research paper with Osaka University has received the 2022 Best Paper Award from the International Institute of Welding. The award ceremony was held at the Marina Bay Sands Convention Center in Singapore on July 16-21, 2023 at the 76th Annual Conference of the International Institute of Welding. A researcher of our Technical Research Center attended with collaborators of Osaka University.

**1. Title of the award-winning paper**

Relationship between ferrite–austenite phase transformation and precipitation behavior of sigma phase in super duplex stainless steel weldment  
Welding in the World, vol.66 (2022), No.2, pp.351-362.

**2. Authors**

- Nippon Yakin Kogyo Co., Ltd.  
Fu-Gao Wei (Technical Research Center), Kun Wang (Senior Managing Executive Officer)
- Graduate School of Osaka University, Division of Materials and Manufacturing Science, Manufacturing Science Course  
Processing for Manufacturing, Materials Joining Process Area (Saida Laboratory)  
Shotaro Yamashita, Kazuyuki Ike, Kazuma Yamasaki, Tomo Ogura, Kazuyoshi Saida (titles omitted)

**3. Abstract**

We developed NAS74NU super duplex stainless steel with excellent corrosion resistance and mechanical properties. It is generally difficult to weld the super duplex stainless steels. It has been problematic that welding leads to a decrease in corrosion resistance and brittleness at weld.

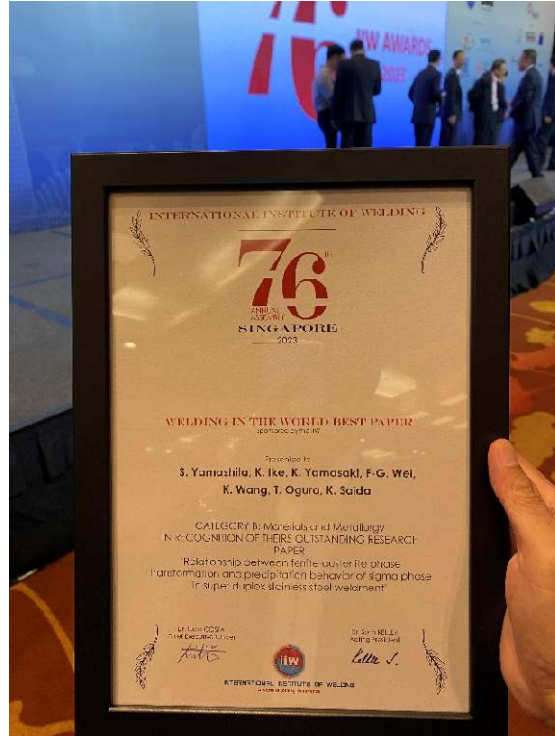
In this paper, we have revealed for the first time our metallographic mechanism for sustaining superior corrosion resistance and mechanical properties even after NAS74NU is welded. We were consequently awarded by recognized that our super duplex stainless steel NAS74NU has excellent weldability maintaining corrosion resistance.

As stated in the list of authors above, this paper is the product of joint research conducted with the Graduate School of Osaka University, Division of Materials and

Manufacturing Science, Manufacturing Science Course, Processing for Manufacturing, Materials Joining Process Area (Saida Laboratory). We will continue to actively pursue joint research with universities and other research institutions for the development of cutting-edge technologies.



At the award ceremony (Our Technical Research Center, Fu-Gao Wei)



Best Paper Award Certificate

## 【Reference】

### About the International Institute of Welding and the Best Paper Award

Comprised of about 50 member nations, the International Institute of Welding is the world's largest international organization for welding. The Best Paper Award is conferred upon the person(s) found by the Institute to have published the previous year's most scientifically and technologically significant paper amongst those printed in "Welding in the World", the academic journal issued by the Institute. One paper is selected from each of three categories (A, B and C). We received the award in Category B.

- Category A : Welding Processes and Additive Manufacturing
- Category B : Materials and Metallurgy
- Category C : Structural Integrity, Design and Fitness or Service

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