Requests for Collaboration

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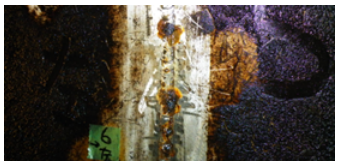
Research Interests

- Microbiologically Influenced Corrosion of Metals
- Antibacterial Metallic Materials for Hygienics

Creative Achievements in The Application of New and Existing Science and Technology

(1) We investigated microbiologically influenced corrosion of stainless‐clad steel taking place at a hydro power station and developed a prevention plan, which was carried out and has been working well.



Microbiologically influenced corrosion taking place at a stainless‐clad steel pipe.

(2) We have studied effects of cleaning agents, including NaOCl aq., on the surface and antibacterial activities of antibacterial metals, such as copper alloys and copper-alloyed stainless steels. Wiping with NaOCl aqueous solutions effectively removed protein surface contaminants. When the amount of residual surface contaminants was reduced, the surfaces of the copper-alloyed stainless steel regained antibacterial activities to the same level as those in a clean surface condition.

Technology (Product, Process, Device, Service etc.) That I Want to Request for Collaboration

- Microbiologists who are interested in interactions between bacterial biofilms and metals.
- Microbiologists who are experienced in field study.
- Facilities which interested in to try antibacterial metals for the purposes of hygienics of environmental surfaces.

A List of 5 Key Publications

- Effects of protein surface contamination on antibacterial activities of copper alloys, Y. Toda, Y. Takashima, H. Kawakami, Y. Sato, Y. Kikuchi, *J. Jap. Inst. Copper*, **57**, 307-312 (2018).
- Effects of NaOCl aqueous solutions and ethyl alcohol solutions on removing protein surface contaminant and recovering antibacterial activities of a copper-alloyed stainless steel, H. Kawakami, H. Nishikubo, K. Hirayama, S. Suzuki, Y. Sato, Y. Kikuchi, *Biocontrol Science*, **20,** 193-198 (2015)
- Effects of surface contamination and hypochlorite wipe cleaning on antibacterial activity of a copper alloyed antibacterial stainless steel, H. Kawakami, T. Hayashi, H. Nishikubo, A. Morikawa, S. Suzuki, Y. Sato, Y. Kikuchi, *Biocontrol Science*, **19**, 73-78 (2014)
- Phenomenon and Measures of The Biocorrosion in The Pen Stock of Shinkarebuchi Hydro Power Station, M. Izumi, K. Miyakoshi, S. Hase, Y. Kikuchi, Y. Sato, H, Kawakami, *ISIJ Symposium-Corrosion accelerated by microbiology,* 20-23 (2013)
- Field tests of microbiologically influenced corrosion of type 304 stainless steels: effects of seasonal change in bacterial consortia and chloride concentration, H. Kawakami, T. Araki, Y. Sato, Y. Kikuchi, *Proceedings in the 16th International Congress on Marine Corrosion and Fouling*, 49 (2012)