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### **Specialty**

Corrosion, Fatigue, Steel Structure, Maintenance Engineering

### **Career**

1994.04 Research Associate, Department of Civil Engineering, Nagoya University

2001.04 Associate Professor, Department of Civil Engineering, Gifu University

2003.04 Associate Professor, Information and Multimedia Center, Gifu University

2004.11 Associate Professor, Department of Civil Engineering, Kyushu University

- Additional position

2015.10-2019.03 Visiting Research Scholar, National Institute of Advanced Industrial Science and Technology (AIST)

2016.06-2019.03 Visiting Professor, Department of Civil Engineering, Hohai University

### **Research Activity**

#### **Journal Papers /1993-**

- S.Kainuma, M.Yang, Y.S.Jeong, S.Inokuchi, A.Kawabata, D. Uchida : Analysis Investigation for Fatigue Behavior of Rib-to-Deck Welded Joints with Different Structural Parameters in Orthotropic Steel Decks, Engineering Failure Analysis, in Press.

- A. Yoshida, L. Liu, D. Tu, S. Kainuma, C.N. Xu : Mechanoluminescent Testing as an Efficient Inspection Technique for the Management of Infrastructures, Journal of Disaster Research, Vol.12, No.3, pp.506-514, 2017.

- S. Kainuma, Y. Tsuchihashi, S. Ishihara, D. Uchida, A. Kaneko and T. Yamauchi : Study on Atmospheric Corrosion Protection Method with Al-Zn Sacrificial Anode and Fiber Sheet for Steel Members, Journal of JSCE, Vol.73, No.2, pp.313-329, 2017.

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- S. Kainuma, X. Guo, J. Kobayashi, K. Utsunomiya and T. Sakamoto : Influence of Size And Proximity of Paint Coating Defects on Corrosion Behavior of Carbon Steel Plates, Journal of JSCE, , Vol.73, No.1, pp.84-97, 2017

- S. Kainuma, X. Guo, J. Kobayashi, K. Muto and H. Miyata : Fundamental Study on Anti-Corrosion Characteristics of Al-5Mg Alloy Thermal Spraying Coatings in Highly Corrosive Environment With

NaCl, Journal of JSCE, Vol.72, No.3, pp.440-452, 2016.

- D. Tabuchi, T. Sajima, S. Kainuma, N. Yagi and D. Uchida : Investigation On Groove Machining Of Turnaround Weld Toes For Improvement Of Fatigue Strength Of Out-Of-Plane Gusset, Journal of Constructional Steel Vol.24, pp.590-597, 2016.

- S. Kainuma, K. Yagi, X. Guo, J. Kobayashi and T. Sajima : Fundamental Study on Machining Method for Cross-cut of Coating Test Specimen, Journal of Constructional Steel, Vol.24, pp.733-739, 2016.

- H. Momota, S. Kainuma, Y.S. Jeong, A. Tabata and S. Tsukamoto : Fundamental study on corroded surface figuration of fatigue-cracked bridge finger joint, Journal of Constructional Steel, Vol.24, pp.701-704, 2016.

- S. Kainuma and N. Hosomi : Fundamental Investigation on Time-dependent Corrosion Behavior for Steel Member in Boundary with Concrete, Concrete Journal, Vol.54, No.9, pp.259-269, 2016.

- S. Kainuma, Y. S. Jeong, M. Yang and S. Inokuchi : Welding Residual Stress in Roots Between Deck Plate and U-Rib in Orthotropic Steel Decks, Measurement, Vol.92, pp.475-482, 2016.

- S. Kainuma, M. Michino, Y. Yamamoto, Y. Fujioka, A. Warashina, I. Takaki and K. Naka : Estimation of Corrosion Damage and Evaluation of Corrosivity for Unpainted Weathering Steel Deck Truss Bridge (Part 3) , Rust Prevention & Control, Vol.60, No.9, pp.338-346, 2016.

- S. Kainuma, Y. Tsuchihashi, S. Ishihara, D. Uchida, A. Kaneko and T. Yamauchi : Fundamental Study on Anti-corrosive Method with Sacrificial Anode for Steel Members using Al-Zn Alloy Casting Plate and Fiber Sheet in Atmospheric Environment, Corrosion Engineering, Vol.65, No.9 pp.309-318, 2016.

- S. Kainuma, M. Micino, Y. Yamamoto, Y. Fujioka, A. Warashina, I. Takaki and K. Naka : Estimation of Corrosion Damage and Evaluation of Corrosivity for Unpainted Weathering Steel Deck Truss Bridge (Part 2) -Evaluation of Corrosive Environment and Analysis of Corrosion Factor-, Rust Prevention & Control, Vol.60, No.8, pp.298-305, 2016.

- J.H. Ahn, S. Kainuma, W.H. Lee, Y.S. Jeong, I.T. Kim : Relationships between Imperfections and Shear Buckling Resistance in Web Plate with Sectional Damage Caused by Corrosion, Advances in Materials Science and Engineering, Vol.2016, Article ID 6467589, 12 pages, 2016.

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- T. Sakamoto, S. Kainuma, J. Kobayashi : The Basic Research of the Coated Steel Plate about the Relationship between the Coating Durability and the Characteristics of Rust, *Zairyo-to-Kankyo, Rapid Communication*, Vol.64, No.7, pp.307-310, 2015.
- R. Watanabe, S. Kainuma, Y. S. Jeong and S. Tsukamoto : Influence of Chemical Surface Preparation on Uncoated Carbon Steel, *Journal of Constructional Steel*, Vol.23, pp.372-377, 2015.
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- S. Kainuma, Y. S. Jeong, J. H. Ahn : Stress Distribution on the Real Corrosion Surface of the Orthotropic Steel Bridge Deck, *Steel and Composite Structures*, Vol. 18, No. 6, pp.1479-1492, 2015.
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- S. Ishihara, S. Kainuma, D. Uchida, A. Kaneko and T. Yamauchi  
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- M. Fujii and S. Kainuma : Influence of Processing Condition of Abrasive Blasting on Steel Surface Roughness, *Journal of Constructional Steel*, Vol.22, pp.469-476, 2014.
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- M. Kinoshita, S. Kainuma, T. Yamagami and S. Tsukamoto : Corrosion Behavior of Steel Member in Boundary with Concrete-Based Materials, *Journal of Constructional Steel*, Vol.21, pp.185-192,

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**Proceedings of International Conference/1996-**

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### **Award**

Tanaka Prize from Japan Society of Civil Engineers for a study on “Time-Dependent Corrosion Behavior of Structural Steel Members in Boundary with Concrete”, 2006.5.

### **Membership**

Japan Society for Civil Engineers (JSCE)

Japanese Society of Steel Construction (JSSC)

Japan Welding Society (JWS)

The Japanese Society for Non-Destructive Inspection (JSNDI)

Japan Society of Corrosion Engineering (JSCE)

Japan Association of Corrosion Control (JACC)

**Lecture Course**

Steel Structural Engineering

Durability Design for Steel Structure

Advanced of Steel Structures