

## Papers / Preprints / Awards : (1996~2011)

1. Akihiro Yamaguchi, Kenjiro Takemura, Shinichi Yokota, Kazuya Edamura, A Robot Hand Using Electro-conjugate Fluid, the Journal of Sensors & Actuators: A. Physical, (2011) In Press
2. A. Yamaguchi, K. Takemura, S. Yokota, K. Edamura, A Robot Finger Using Electro-conjugate Fluid, the Journal of Advanced Robotics, (2011) In Press
3. K. Mori, H. Yamamoto, K. Takemura, S. Yokota, K. Edamura: Dominant Factors Inducing Electro-conjugate Fluid Flow the Journal of Sensors and Actuators, A, Vol.167, pp.84/90, (2011)
4. J-W Kim, S. Yokota, K. Edamura; ECF-jet Micro-generator with Multiple Needle-Hole Electrode Pairs, Proc. of ICMDT2011, pp.235/236, (2011)
5. Masahiro Ishida, Yutaka Tanaka, Shinichi Yokota, Kazuya Edamura: Design and Fabrication of Electrodes for High-Powered Micro Pump Using Electro-Conjugate Fluid,, Proc. of ICMDT2011, pp.69/70, (2011)
6. Akihiro Yamaguchi, Kenjiro Takemura, Shinichi Yokota, Kazuya Edamura: A Robot Hand using Electro-conjugate Fluid, Proc. ICRA, IEEE, pp.5923/5928, , (2011)
7. Kenichiro Tokida, Kenjiro Takemura, Shinichi Yokota, Kazuya Edamura: Robotic Earthworm using Electro-conjugate Fluid, the International Journal of Applied Electromagnetics and Mechanics, Vol.33, No.4, pp.1643/1651, (2010)
8. Yoshitsugu Ogawa, Shinichi Yokota, Kazuya Edamura, Kenjiro Takemura: A dual-axis liquid rate micro gyroscope using Electro-Conjugate Fluid, Journal of Advanced Computational Intelligence and Intelligent Informatics, Vol.14, No.7, pp.751/755, (2010)
9. Hideki Yamamoto, Kento Mori, Kenjiro Takemura, Leslie Yeo, James Friend, Shinichi Yokota, Kazuya Edamura: Numerical Modeling of Electro-Conjugate Fluid Flows, the Journal of Sensors and Actuators, A, Vol.161, pp.152/157,

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10. Shinichi Yokota, Fumiya Yajima, Kenjiro Takemura, Kazuya Edamura: ECF-jet driven Micro artificial antagonistic muscle actuators and its integration the Journal of Advanced Robotics, Vol.24, No.14, pp.1929/1934, (2010)
11. Kazuhiro Yoshida, Tsutomu Soga, Masashi Kawachi, Kazuya Edamura and Shinichi Yokota:A Magneto-Rheological Valve-Integrated Cylinder and Its Application, the Journal of Systems and Control Engineering, Part I of the Proceedings of the IMechE, Vol.224, No.1, pp.31/40, (2010)
12. Tsunehiko Imamura, Toshiya Suzuki, Joon-wan Kim, Shinichi Yokota, Kazuya Edamura: Miniaturization of ECF Micro Rate Gyro by using MEMS technology, 14th International Conference on Mechatronics Technology (Proc. Proc of 14th ICMT2010), Osaka, CD-RoM, B-16, pp.303/308 (2010)
13. Hai-bo Wang, Joon-wan Kim, Shinichi Yokota, Kazuya Edamura: A high performance ECF-jet generator using improved three-dimensional electrode structures, 14th International Conference on Mechatronics Technology (Proc. Proc of 14th ICMT2010) [Best Paper Award], Osaka, CD-RoM, B-11, pp.142/146 (2010)

**Best Paper Award (ICMT2010, Osaka)**

14. Yutaka Tanaka, Masahiro Ishida, Shinichi Yokota, Kazuya EDAMURA: Miniaturized and High-Powered Micro Pump Using Electro-Conjugate Fluid, 13th International Symposium on Robotics and Applications (Proc. ISORA 2010), Kobe, CD-RoM, (2010)
15. A. Yamaguchi, ·J-W Kim, T.V.X. Nguyen, S. Yokota, K. Edamura: MEMS-based tube-type micropump by using electro-conjugated fluid (ECF), 19th International Conference on Electrical Machines (Proc. ICEM2010), Rome, CD-RoM, (2010)
16. A. Yamaguchi, K. Takemura, S. Yokota, K. Edamura: A robot finger using electro-conjugate fluid, Proc. ICEM2010, Rome, CD-RoM, (2010)
17. K. Mori, H. Yamamoto, K. Takemura, S. Yokota, K. Edamura :Theoretical Modeling

and Corroborative Experiments for Electro-conjugate Fluid Flow, Proc. ICEM2010, Rome, CD-RoM, (2010)

18. Yoshitsugu Ogawa, Shinichi Yokota, Kazuya Edamura, Kenjiro Takemura: A dual-axis liquid rate micro gyroscope using Electro-Conjugate Fluid, Proc of 13th ICMT2009, CD-RoM, Cebu, Phillippines, (2009)
19. J. Inoue, S. Yokota, K. Takemura, K. Edamura: Experimental Study on ECF-jet for ECF driven Micro Fingers, Proc of 13th ICMT2009, CD-RoM, Cebu, Phillippines, (2009)
20. Joon-wan Kim, Toshiya Suzuki, Shinichi Yokota, and Kazuya Edamura: Tube-type micropump by using electro-conjugated fluid (ECF), Proc of 13th ICMT2009, CD-RoM, Cebu, Phillippines, (2009)
21. Kenichiro Tokida, Kenjiro TAKEMURA, Shinichi YOKOTA, Kazuya EDAMURA: Robotic Earthworm using Electro-conjugate Fluid -Confirmation of Fundamental Principle, Proc of 13th ICMT2009, CD-RoM, Cebu, Phillippines, (2009)
22. Hideki Yamamoto, Kenjiro Takemura, Shinichi Yokota, Kazuya Edamura, James R. Friend, Leslie Y. Yeo: Theoretical Modeling of Electro-conjugate Fluid Flow, 13th International Conference on Mechatronics Technology (ICMT 2009), CD-RoM, Cebu City, Philippines, 20-23 October, (2009)
23. Shinichi YOKOTA, Mitsutoshi HONGO, Kenjiro TAKEMURA, Kazuya EDAMURA, Tsunehiko IMAMURA, Hideo KUMAGAI: ECF Liquid Rate Gyroscope, 14th International Symposium on Applied Electromagnetics and Mechanics (ISEM2009), Xian, China, pp. 625/626, (2009)
24. Kenichiro TOKIDA, Kenjiro TAKEMURA, Shinichi YOKOTA, Kazuya EDAMURA: Robotic Earthworm using Electro-conjugate Fluid, ISEM09, Xian, pp. 633/634, (2009)
25. Joon-wan Kim, Toshiya Suzuki, Shinichi Yokota, and Kazuya Edamura: Tube-type ECF pump, ICMDT2009, Jeju Island, Korea, June 25-26, (2009)

26. Shinichi YOKOTA, Fumiya YAJIMA, Kenjiro TAKEMURA, Kazuya EDAMURA: ECF-jet driven Micro Artificial Muscle Actuators and its Application to an ECF Micro Hand, Proc. of 7th International Conference on Fluid Power Transmission and Control (ICFP2009), pp.33/37, China (2009) {Invited}
27. Kenjiro Takemura, Tsunehiko Imamura, Kazuya Edamura, Hideo Kumagai, Shinichi Yokota : The Practical Design of a Liquid Rate Gyroscope using Electro-conjugate Fluid, the Journal of Systems and Control Engineering, Part I of the Proceedings of the IMechE, Vol.223, No.6, pp.727/736, (2009)
28. Rohan Raghavan, Jason Qin, Leslie Y. Yeo, James R. Friend, Kenjiro Takemura, Shinichi Yokota, Kazuya Edamura: Electrokinetic Actuation of Conductivity Dielectric Liquids, the Journal of Sensors and Actuators, B, Vol.140, issue1, pp.287/294, (2009)
29. Kenjiro Takemura, Shinichi Yokota, Mamoru Suzuki, Kazuya Edamura, Tsunehiko Imamura, Hideo Kumagai: Micro Liquid Rate GyroScope using Electro-conjugate Fluid, the Journal of Sensors and Actuators, A, Vol.149, issue2, pp.173/179, (2009)
30. Kenjiro Takemura, Fumiya Yajima, Kazuya Edamura, and Shinichi Yokota: Integration of Micro Artificial Muscle cells using Electro-conjugate Fluid, the Journal of Sensors and Actuators, A, Vol.144, Issue2, pp.348/353, (2008)
31. Tsunehiko Imamura, Shinichi Yokota, Kenjiro Takemura, Mamoru Suzuki, Kazuya Edamura, Hideo Kumagai :A Liquid Rate Gyroscope using Electro-conjugate Fluid- Practical Design and Characterization -, ISSNIP2008 (Int. Conf. Intelligent Sensors, Sensor Networks and Information Processing), Sydney, Australia, Dec., CD-Rom, (2008)
32. Joon-wan Kim, Yoshitsugu Ogawa, Shinichi Yokota, Kazuhiro Yoshida, Kazuya Edamura: ECF Microactuator with Needle-Ring Electrodes by MEMS Technology, Proc. ICMT2008, Sudbury, Canada, CD-Rom, (2008)
33. Shinichi YOKOTA, Fumiya YAJIMA, Kenjiro TAKEMURA, Kazuya EDAMURA: A cell integrated ECF-jet driven artificial muscle actuator, Proc. ICMT2008, Canada,

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34. Yutaka Tanaka, Masafumi Ebisawa, Shinichi Yokota, Kazuya Edamura:  
Miniaturized and High - Powered Micro Pump Using Functional Fluid ECF, Proc.  
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35. Shinichi Yokota, Kenjiro Takemura, Mamoru Suzuki, Kazuya Edamura, Hideo  
Kumagai and Tsunehiko Imamura: A Liquid Rate Gyroscope using Electro-conjugate  
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36. Kenjiro Takemura, Young-Pyo Hong, Kazuya Edamura, Shinichi Yokota, :  
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37. Rohan Raghavan, Jason Qin, Leslie Y. Yeo, James R. Friend, Kenjiro Takemura,  
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Dielectric Liquids, Proceedings of the Sixth International ASME Conference  
on Nanochannels, Microchannels and Minichannels, ICNMM2008, Darmstadt,  
Germany, June, 23-25, (2008)
38. Shinichi Yokota, Kazuhiro Yoshida, Woo-Suk Seo, Kazuhiro Koizumi, Joon-wan  
Kim, and Kazuya Edamura: Forced Liquid Cooling System Using Thin Planar ECF  
Pump for High Power Electronic Chips, Proc. of ACTUATOR2008, Bremen, Germany,  
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39. Shinichi YOKOTA, Kenjiro TAKEMURA, Mamoru Suzuki, Kazuya Edamura, Hideo  
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Robotics & Automation (ICRA), Pasadena, USA, pp.317/322, (2008)
40. Kenjiro Takemura, Shinichi Yokota and Kazuya Edamura: ECF Micro Artificial  
Muscle Actuator and its Application to Micro Robot Arm, Proc. of LDIA2007,  
CD-ROM, (2007)
41. Kenjiro Takemura, Hiroto Kozuki, Kazuya Edamura, and Shinichi Yokota: A  
Micromotor using Electro-conjugate Fluid - Improvement of motor performance

by using saw toothed electrode series -, the *Journal of Sensors and Actuators, A*, Vol. 140, pp. 131/137, (2007)

42. K. Takemura, S. Yokota and K. Edamura: Driving Performance and Control of a Micro Artificial Muscle Cell using Electro-Conjugate Fluid, the *Journal of Sensors and Actuators A*, Vol. 133, No. 2, pp. 493/499, (2007)
43. Shinichi YOKOTA, Hiroto Kozuki, Kenjiro TAKEMURA and Kazuya Edamura: DP-RE type Micromotors using Electro-Conjugate Fluid, Proc. of 2007 IEEE International Conference on Robotics & Automation (ICRA), Roma, Italy, pp. 1567/1571, (2007)
44. S. Yokota, R. Abe, K. Takemura, K. Edamura : Micro Finger Driven by Electro-conjugate Fluid jet (ECF-jet) and Characteristics Evaluation of a Large Model, the *Journal of Sensors and Actuators A*, Vol. 136, issue. 2, pp. 629/637, (2007)
45. W-S Seo, K. Yoshida, S. Yokota, K. Edamura : A high performance planar pump using electro-conjugate fluid with improved electrode patterns Development of a miniature thin-planar pump using electro-conjugate fluid, the *Journal of Sensors and Actuators A*, Vol. 134, No. 3, pp. 606/614, (2007)
46. Shinichi Yokota, Ryutaro Abe, Kenjiroh Takemura, Kazuya. Edamura : A Micro Finger using Electro-conjugate Fluid - Concept and Performance of Large Model -, Proc. of ICMT06, Mexicocity CD-rom, (2006)

**Best Research Paper Award (ICMT2007, Mexicocity)**

47. S. Yokota. H. Kozuki, H. Hayashi, K. Takemura, K. Edamura: Improving Output Power of ECF Micromotors with Triangle Electrodes, Proc. of ICMT06, Mexicocity CD-rom, (2006)
48. Shinichi YOKOTA, Kazuya EDAMURA: New Construction of an Electro-Conjugate Fluid-jet Driven Micromotor with Inner Diameter of 2mm, Proc. IMechE, Part I: the *Journal of Systems and Control Engineering*, Vol. 220, No. 4, pp. 251/256, (2006)

Donald Julius Groen Prize 2006 (IMechE, London)

49. Kenjiro TAKEMURA, Shinichi YOKOTA and Kazuya Edamura: Driving Performance and Control of a Micro Artificial Muscle Cell using Electro-Conjugate Fluid, Proc. of 2006 IEEE International Conference on Robotics & Automation (ICRA), Florida, pp.1018/1023, (2006)
50. S. Yokota, R. Nishizawa, K. Takemura, K. Edamura: A Micro Gyroscope using Electro-conjugate Fluid, Proc. of 2006 IEEE International Conference on Robotics & Automation (ICRA), Florida, pp.4321/4323, (2006) May
51. S. Yokota, R. Nishizawa, K. Takemura, K. Edamura: A Micro Gyroscope using Electro-conjugate Fluid (ECF), the Journal of Robotics and Mechatronics, Vol.18, No. 2, pp.114/120, (2006)
52. S. Yokota, R. Nishizawa, K. Takemura, K. Edamura : Development of a Micro Gyroscope using Electro-conjugate Fluid, Proc. of the ICMT2005, Malaysia Dec. (2005)
53. R. Abe, S. Yokota, K. Takemura, K. Edamura : Micro Finger Driven by Electro-conjugate fluid jet (ECF-jet) and Characteristics Evaluation of a Large Model, Proc. of the ICMT2005, Malaysia Dec. (2005)
54. K. Takemura, S. Yokota, K. Edamura: Driving Characteristics of a Micro Artificial Muscle Actuator Using Electro-conjugate Fluid, Proc. of 6th JFPS-ISFP05, Tsukuba, CD-Rom, 2D3-1, (2005)
55. K. Takemura, S. Yokota, K. Edamura: A Micro Artificial Muscle Actuator using Electro-Conjugate Fluid, Proc. of the Bath Workshop on Power Transmission & Motion Control (PTMC 2005), Bath, pp.269/276, (2005)
56. Kazuhiro Yoshida, Tsutomu Soga, Shinichi Yokota, Masashi Kawachi, and Kazuya Edamura: A Magneto-Rheological Valve-Integrated Cylinder and Its Application, Proc. of PTMC 2005, Bath, pp.277/290, (2005)
57. R. Abe, S. Yokota, K. Takemura, K. Edamura: A Microactuator Driven by Pressure

due to ECF-jet, Proc. of the First Joint International Conference on Manufacturing, Machine Design and Tribology(ICMDT. Intl.), CD-Rom MAA-401, Seoul, Korea, (2005)

58. W-S. Seo, S.Yokota, K.Yoshida, K.Edamura: A Thin-Planar Pump for Liquid Cooling System Using ECF-Jet, Proc. of 1st ICMDT. Intl., CD-Rom MAA-204, Seoul, Korea, (2005)

**Best Student Paper Award (IEEE-NEWS, China)**

59. Kenjiro TAKEMURA, Shinichi YOKOTA and Kazuya EDAMURA: Development of a Micro Artificial Muscle Actuator using Electro-Conjugate Fluid(ECF), Proc. of 2005 IEEE International Conference on Robotics & Automation (ICRA), Barcelona, pp.534/539, (2005)
60. Shinichi YOKOTA, Kazuhiro YOSHIDA, Kazuya EDAMURA: Micro Actuators using Functional Fluids and the Systems, Proc. of 6th International Conference on Fluid Ppower Transmission and Control (ICFP2005), pp.66/70, China (2005)
61. Shinichi YOKOTA, Woo-Suk SEO, Kazuhiro YOSHIDA, Kazuya EDAMURA: A High Performance Planar ECF Pump for Liquid Cooling of High Power Electronic Chips, Proc. of ICFP2005, China, pp.234/237, (2005) April
62. S. Yokota, K. Kawamura, K. Takemura, K. Edamura: High-Integration Micro-motor Using Electro-Conjugate Fluid (ECF), the Journal of Robotics and Mechatronics, Vol.17, No.2, pp.142/148, (2005)
63. Kenjiro TAKEMURA, Shinichi YOKOTA and Kazuya Edamura: Development of a Micro Artificial Muscle Actuator using Electro-Conjugate Fluid(ECF), Proc. of ICMT2004, Hanoi, Vietnam, pp.221/226, (2004)
64. Shinichi YOKOTA, Woo-Suk SEO, Kazuhiro YOSHIDA, and Kazuya EDAMURA: A Planar Pump Using Electro-Conjugate Fluid (ECF) for Liquid Cooling of Electronic Chips , Proc. of ICMT2004, Hanoi, Vietnam, pp.127/132, (2004)
65. Kazuhiro Yoshida, Tsutomu Soga, Shinichi Yokota, Masashi Kawachi and Kazuya

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67. Shinichi YOKOTA, Yutaka KONDOH, Kokichi ISHIHARA, Yasufumi OTSUBO, Kazuya EDAMURA: A Fluid Control Valve by Making Use of an Increase in Viscosity of Dielectric Fluids Caused by an Electrode Planted with Hair-like Short Fibers (Proposition of a Fiber -planted ER Valve), JSME International Journal, Vol.46, No.4, Series C, pp.1538/1546, (2003)
68. Shinichi Yokota, Ryutaroh Abe, Wataru UEDA, Kazuya EDAMURA : A Micro Actuator Using ECF-Jet with Needle-type Electrode, Proc. of FLUCOME03, Sorrent, Italy, CD-Rom, (2003) August
69. Kazuhiro YOSHIDA, Hiroyuki TAKAHASHI, Shinichi YOKOTA, Masashi KAWACHI, Kazuya EDAMURA : A Bellows -driven Motion Control System Using a Magneto-Rheological Fluid, Proc. of the Fifth JFPS Intl. Sympo. on Fluid Power Nara, Japan, Vol.2, pp403/408, (2002)
70. Shinichi YOKOTA, Yutaka KONDOH, Atsushi Sadamoto, Yasufumi Otsubo, Kazuya Edamura : A Micro Motor Using Electro-conjugate Fluids (ECF) (Proposition of Stator Electrode-type (SE-type) Micro ECF motors), JSME International Journal, Vol.44, Ser.C, No.3, pp.756/762, (2001)
71. Shinichi YOKOTA, Masakazu Hirata, Yutaka KONDOH, Koichi Suzumori, Atsushi Sadamoto, Yasufumi Otsubo, Kazuya Edamura : A Micro-Motor Using Electro-conjugate Fluids (ECF) (Fabrication of inner Diameter 2mm RE-type ECF Motor), the Journal of Robotics and Mechatronics, Vol.13, No.2, pp140/145, (2001)
72. Kazuhiro YOSHIDA, Shinichi YOKOTA, Takeshi OKAYASU, Yasufumi OTSUBO, Kazuya EDAMURA : An 1-cm-cubic-size SMA-Driven Micropump Using ECF Jet Cooling, Proc.

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74. Shinichi YOKOTA, Atsushi SADAMOTO, Yasufumi OTSUBO, Kazuya EDAMURA : A Micromotor Using Electro-conjugate Fluid (ECF), Proc. of 1997 FLOMEKO, Hayama, Vol. 2, pp713/718, (1997) Sept.
75. Shinichi YOKOTA, Yutaka KONDOH Kazuhiro YOSHIDA, Kazuya EDAMURA: A Mini Valve in Application of Electro-rheological Fluids, Proc. of IFAC San Francisco, Vol. A , pp493/498, (1996) June
76. Shinichi YOKOTA, Kazuhiro YOSHIDA, Yasuhumi OTUBO, Kazuya EDAMURA : A Micromotor Using a Kind of Dielectric Fluids, Conferencd Record of 1996 IEEE ndustry Application Society 31st IAS Annual Meeting, San Diego, Vol. 3, pp1749/1754, (1996) October