



[Electrical Engineering](#) > NARUSHIMA Kazuo



## NARUSHIMA Kazuo

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| Organization    | Electrical Engineering                                   |
| Position        | Associate Professor                                      |
| Academic Title  | Doctor(Engineering)                                      |
| Research Fields | Electric Properties of Solids, Semiconductor Engineering |

### << Research Subjects >>

1. [Optical Physics Theory of Organic Semiconductor](#)
2. [Organic Semiconductor Solar Cell](#)
3. [Polymer Surface Modification Mechanism by Plasma Treatment and Plasma Physics](#)

### << Academic Activities >>

#### Papers and Notes

1. [Kazuo NARUSHIMA and Hiroki. IKEJI : " Plasma Surface Modification of Poly\(aryl ether ether ketone\) and Surface Metallization using Copper Metal", J. Soc. Fiber Sci. & Technol, Japan, Vol. 64,p.127-131 \(2009\)](#)
2. [Kazuo NARUSHIMA, Nanami YAMASHITA, Y. ISONO, M. R. Islam, and Manabu TAKEUCHI:" Effect of Irradiation Power on Surface Modification of Polyester by Ammonia Plasma Treatment", Jpn. J. Appl. Phys., vol.47, p.3603 -3605 \(2008\)](#)
3. [Kazuo NARUSHIMA, Nanami YAMASHITA, Megumi FUKUOKA, Norihiro INAGAKI, Y. ISONO, and M. R. Islam:" Surface Modifications of Polyester Films by Ammonia Plasma", Jpn. J. Appl. Phys., Vol. 46, p. 4238 - 4245 \(2007\)](#)
4. [Kazuo NARUSHIMA, Noriko MATSUDA, Chie MIZUTANI, Nanami YAMASHITA, Norihiro INAGAKI, Kokoro. IIO, Y. ISONO, and M. R. Islam: "Possibility of Solid-State Graft Copolymerization on Poly\(ethylene terephthalate\) Films by Plasma Irradiation and Effects of Surface Modification", Jpn. J. Appl. Phys., Vol. 46, p. 4252 - 4259 \(2007\)](#)
5. [Kazuo NARUSHIMA, Yasutaka TSUTSUI, Kazuo KASUKABE, Norihiro INAGAKI, Y. ISONO, and M. R. Islam:" Surface Modification of Polymer Films by Pulsed Oxygen Plasma", Jpn. J. Appl. Phys., Vol. 46, p. 4246 - 4251 \(2007\)](#)
6. [Kazuo NARUSHIMA, Megumi FUKUOKA, Norihiro INAGAKI, Y. ISONO, and M. R. Islam:" Amination and Oxidation Reactions on Polyethylene Surfaces by Ammonia Plasma Treatment", Jpn. J. Appl. Phys., vol.46 p.7855 -7857\(2007\)](#)
7. [Plasma surface modification of aromatic liquid crystal polymers, and its resultant improvement in adhesive strength with copper thin films](#)
8. [Martin KRAL, Akihisa OGINO, Kazuo NARUSHIMA, Norihiro INAGAKI, Mitsuji, YAMASHITA, and Masaaki NAGATSU: " Low-Temperature Nitrogen-containing Groups Introduction onto Polyurethane Surface by Means of Surface-wave Excited N<sub>2</sub>/H<sub>2</sub> Plasma", Jpn. J. Appl. Phys.,Vol. 46, p. 7470-7474\(2007\)](#)
9. [Norihiro INAGAKI, V. Cech, Kazuo NARUSHIMA and Yusuke TAKECHI: "Oxygen and Water Vapor Gas Barrier Poly\(ethylenephthalate\) Films by Deposition of SiO<sub>x</sub> Plasma Polymers from Mixture of Tetramethoxysilan and Oxygen", J. Appl. Polym. Sci., Vol. 104, p.915-925 \(2007\)](#)
10. [Norihiro INAGAKI, Kazuo NARUSHIMA, H. HASHIMOTO and Katsunori TAMURA: "Implantation of Amino Functionality into Amorphous Carbon Sheet surface by NH<sub>3</sub> plasma", Carbon, \(2007\)](#)
11. [Introduction of carboxylic groups on ethylene-co-tetra fluoroethylene \(ETFE\) film surfaces by CO<sub>2</sub> plasma.](#)
12. [Low-temperature Surface Amination of Biopolymer Using Surface-wave Excited Ammonia Plasma](#)
13. [Norihiro INAGAKI and Kazuo NARUSHIMA: "Surface modification of aromatic polymer films for copper metallization", PMSE Preprint, No.94, p.372 \(2006\)](#)
14. [Plasma surface modification of poly \(phenylene sulfide\) films for copper metallization](#)
15. [Norihiro INAGAKI, Kazuo NARUSHIMA, Katsunori KUYABARA and Katsunori TAMURA:" Introduction of Amino Functionalities on Ethylene-co-tetrafluoroethylene Films by NH<sub>3</sub> Plasmas J. Adhesion Sci., Tech., Vol. 19, p.1189-11205 \(2005\)](#)
16. [Norihiro INAGAKI, Kazuo NARUSHIMA, N. TUCHIDA and Kouji. MIYAZAKI: "Surface Characterization of Plasma Modified Poly\(ethylene telephthalate\) Films Surface", J. Polym. Sci., Polymer Phisics, Vol. 42, p.3727-3740\(2004\)](#)
17. [Norihiro INAGAKI, Kazuo NARUSHIMA and Akitomo YOKOI: "Surface Modification of PET films by a combination of](#)

- [vinylphthalimide deposition and Ar irradiation](#), J. Adhesion Sci. Tech., Vol. 18, p.1517-1528 (2004)
18. [Norihiro INAGAKI, Y.W. Park, Kazuo NARUSHIMA and Kouji MIYAZAKI: "Plasma modification of poly\(oxybenzoate-co-oxyphthalate\) film surface for copper metallization"](#), J. Adhesion Sci., Tech., Vol. 18, p.1427-1528 (2004)
  19. [Norihiro INAGAKI, Kazuo NARUSHIMA and S. K. Lim: "Effect of aromatic groups in polymer chain on plasma modification"](#), J. Appl. Polym. Sci., Vol. 89, p.96-103 (2003)
  20. [Norihiro INAGAKI, K. NARUSHIMA, S. K. Lim, Y.W. Park and Y. IKEDA: "Surface Modification of ethylene-co-tetrafluoroethylene copolymer films by remote plasma"](#), J. Polym. Sci., Polymer Physics, Vol. 40, p.2871-2882(2003)
  21. [Norihiro INAGAKI, K. NARUSHIMA, Sayuri EJIMA Y. Ikeda, S. K. Lim and Y.W. Park: "Hydrogen recovery of plasma modification film surface of ethylene-co-tetrafluoroethylene"](#), J. Adhesion Sci. Tech., Vol. 17, p.1457-1475(2003)
  22. [Kazuo NARUSHIMA, Sigeru Tasaka and Norihiro INAGAKI: "Surface Modification of poly\(aryl ether ether ketone\) by Pulsed Oxygen Plasma"](#), Jpn. J. Appl. Phys., Vol. 41, p.6506-6516 (2002)
  23. [Norihiro INAGAKI, Sigeru TASAKA, Kazuo NARUSHIMA and H. KOBAYASHI: "Surface Modification of PET films by Pulsed Ar Ion Plasma"](#), J. Appl. Polym. Sci., Vol. 85, p.2845-2852 (2002)
  24. [Norihiro INAGAKI, Kazuo NARUSHIMA and Y. YAMAMOTO: "Surface Modification of Tetrafluoroethylene- Perfluoroalkyl Vonyl Ether Copolymer \(PFA\) by Plasma for Copper metallization"](#), J. Appl. Polym., Vol. 85, p.1087-1097(2002)
  25. [Norihiro INAGAKI, Sigeru TASAKA, Kazuo NARUSHIMA and K. TERANISHI: "Surface Modification of Poly\(tetrafluoroethylene\) with Pulsed Hydrogen Plasma"](#), J. Appl. Polym. Sci., Vol. 83, p.340-348(2002)
  26. [Kazuo NARUSHIMA Tomonori KONTANI, R. F. Egerton, Ryoichi. URAO and Manabu TAKEUCHI: "Influence of crystal structure on carrier transport in tithanyl-phthalocyanine thin films"](#), Appl. Surface Sci., vol 113/114, p.326-330(1997).
  27. [Kazuo NARUSHIMA, Masayoshi. MASUI, Fujio KANEKO, Manabu TAKEUCHI and Hiroshi MASE: "Influence of C60 Doping on the Electrical Conduction in Organic Solvents and Naphthalene"](#), DENKI KAGAKU, vol 65, p.590-596 (1997).
  28. [Norihiro INAGAKI, Kazuo NARUSHIMA, Yasutaka TSUTSHI and Yuko OHYAMA: "Surface modification and degradation of poly \(lactic acid\) films by Ar-plasma"](#), J. Adhesion Sci. technol., Vol.16, p.1041-1054 (2002)
  29. [Norihiro INAGAKI, Sigeru TASAKA, Kazuo NARUSHIMA and K. MOCHIZUKI: " Surface Modification of Tetrafluoroethylene-Perfluoroalkyl Vonyl Ether Copolymer\(PFA\) by Remote Hydrogen Plasma and Surface Metallization with Electroless Plating of Copper Metal"](#), Macromolecules, Vol.32, P.8566(1999)

## Presentations

1. [Martin KRAL, Akihisa OGINO, Kazuo NARUSHIMA, Mitsuji Yamashita and Masaaki NAGATSU: "Low-temperature chemical modification of polymer surfaces using surface-wave plasma"](#), 6th International Workshop on Microwave Discharges, p.50, Zvenigorod(Russia), Sep. 11-15 (2006).
2. [Akihisa OGINO, Martin KRAL, T. Tanaka, Kazuo NARUSHIMA, Mitsuji Yamashita and Masaaki NAGATSU: "Chemical Modification of Polymer Surface by Low-Temperature Surface-wave Plasma"](#), 6th International Conference on Reactive Plasmas and 23th Symposium on Plasma Proceeding (ICRP-6/SPP-23), p.427-428., Matsushima, Miyagi (Japan) Jan. 24-27(2006)
3. [Kazuo NARUSHIMA, Nanami YAMASHITA and Norihiro INAGAKI: "Surface modification of polyester films by ammonia plasma"](#), The 2005 International Chemical Congress of Pacific Basin Societies, Honolulu(Hawaii, United States), Dec. (2005)
4. [Kazuo NARUSHIMA, Yasutaka TSUTSUI and Norihiro INAGAKI: "Effect of Modulated RF Power on Surface Modification of Polymer Material by Plasma"](#), Proc. IUPAC Polym. Conf. On the Mission and challenges of Polymer Science and Technology, Tokyo (Japan), p.390 (2002)
5. [Kazuo NARUSHIMA, Manabu TAKEUCHI, Masayoshi MASUI and Hiroshi MASE: "Effects of C60-Doping on the Photoelectronic Properties of Phthalocyanine Layers"](#), Proc. IS&T 's NIP12 : Int. Conf. on Digital Printing Technol., San-Antonio(Texas, United States), p. 436-439 (1996).
6. [Yuichi HARADA, Kazuo NARUSHIMA, Motoaki SANO, Matsuo SEKINE, Yasushi HIGASHIO and Motoichi OHTSU: "Optical Response of YBa2Cu3O7-x Epitaxial Thin Films"](#), Proc. 4th Int. Symp. Superconductivity (ISS'91), Tokyo (Japan), p.763-766(1991)
7. [Norihiro INAGAKI and Kazuo NARUSHIMA: "Surface modification of aromatic polymer films for copper metallization"](#), 231st ACS National Meeting, PMSE-235, GA (Atlanta, United States), Mar. 26-30(2006)
8. [Kazuo NARUSHIMA, Hiroki IKEJI, Y. W. Park and Norihiro INAGAKI: "Surface Modification of Aromatic Polymer by Plasma Treatment for Cu Metallization"](#), Proc. 8th Japan International SAMPE Symposium., Tokyo (Japan), p.737 -741(2003)