



Kazunari SHINBO, Dr. Eng.

Associate Professor

Program: Electrical and Information Engineering

Area: Electrical and Electronic Engineering

Undergraduate: Dept. of Engineering

Research Fields of Interest

His research interests cover the areas of electrical and electronic materials containing fabrications of nanostructured ultrathin films for electronic and optical devices. His special emphasis places on sensing of gas- and bio-molecules utilizing surface plasmon excitations and quartz crystal microbalance. He is a member of the Project of Nano-Electronic and Photonic Devices and Bioelectronics in the Center for Transdisciplinary Research, Niigata University. Three subjects of nanoelectronic devices, nanophotonic devices and nano-biodevices have been researched with two Profs. Futao Kaneko and Keizo Kato and Associate Prof. Akira Baba in the project.

Education

1995: Doctor of Engineering, Niigata University, Japan

1992: M. Eng. Department of Electronics, Niigata University, Japan

1990: B. Eng. Department of Electronics, Niigata University, Japan

Major Publications

Selected Papers

- [1] Shinbo K, Otuki S, Kanbayashi Y, Ohdaira Y, Baba A, Kato K, Kaneko F, and Miyadera N, "A hybrid humidity sensor using optical waveguides on a quartz crystal microbalance", *Thin Solid Films*, Vol.518, 2, pp.629-633, 2009.
- [2] Kato K, Yamashita K, Ohdaira Y, Baba A, Shinbo K, Kaneko F, "Electrochemical surface plasmon excitation and emission light properties in poly(3-hexylthiophene) thin films", *Thin Solid Films*, Vol.518, 2, pp.758-761, 2009.
- [3] Minagawa M, Kitamura S, Baba A, Shinbo K, Kato K, and Kaneko F, "Fabrication and Characteristics of Field-Effect Transistors with Vanadium Pentoxide and Copper Phthalocyanine Multilayers", *APPLIED PHYSICS EXPRESS*, Vol. 2, 7, Article Number: 071502, 2009.
- [4] Shinbo K, Miura H, Ohdaira Y, Baba A, Kato K, and Kaneko F, "Adsorption and Kazunari Shinbo Dr. Eng. Dept. of Electrical & Electronic Engineering, Niigata University Surface Plasmon Emission Light of Polystyrene Spheres with Fluorescent Dyes on Ag Thin Film", *IEICE TRANS. ELEC.*, E91-C, pp.1663-1668, 2008.
- [5] Kobayash Y, Fukushima M, Baba A, Ohdaira Y, Shinbo K, Kato K and Kaneko F, "Humidity Adsorption and Surface Plasmon Excitation of Poly, vinyl alcohol Films with Fluorescent Microspheres", *Jpn. J. Appl. Phys.*, Vol. 47, pp. 1110-1114, 2008.
- [6] Shinbo K, Akazawa T, Takatsuka Y, Ohdaira Y, Baba A, Kato K and Kaneko F, "Characteristics of Field-Effect Transistors with Vapor-Treated Magnesium Phthalocyanine Films", *Jpn. J. Appl. Phys.*, Vol. 47, pp. 484-487, 2008.
- [7] Baba A, Sano Y, Ohdaira Y, Shinbo K, Kato K, Kaneko F, "Electrocatalytic Oxidation Properties of Ascorbic Acid at Poly,3,4-ethylenedioxythiophene Films Studied by Electrochemical-Surface Plasmon Resonance Spectroscopy", *TRANS. ELEC.*, E91C, 12, pp.1881-1882, 2008.
- [8] Kato K, Imai M, Ohdaira Y, Shinbo K and Kaneko F, "Surface Plasmon Emission Light from Ag/MgF₂/Organic Dye/MgF₂/Ag Films", *Mol. Cryst. Liq. Cryst.*, Vol.472, pp.51-59, 2007.
- [9] Akazawa T, Takatsuka Y, Ohdaira Y, Shinbo K, Kato K and F. Kaneko F, "Characteristics of Magnesium Phthalocyanine Field-Effect Transistors Due to Vapor Treatments", *Mol. Cryst. Liq. Cryst.*, Vol.471, pp.213-219, 2007.
- [10] Jiang G, Baba A, Ikarashi H, Xu R, Locklin J, Kashif KR, Shinbo K, Kato K, Kaneko F, Advincula R, "Signal Enhancement and Tuning of Surface Plasmon Resonance: ATR Spectroscopy and Imaging of Hybrid Gold Nanoparticles/ Polyelectrolytes Ultrathin Films", *The Journal of Physical Chemistry C*, Vol. 111, pp.18687-18694, 2007.
- [11] Kato K, Saito Y, Ohdaira Y, Shinbo K and Kaneko F, "Evaluation of Nanostructure and Properties of Aluminum

Phthalocyanine Chloride Thin Films due to Ethanol-Vapor Treatment”, *Thin Solid Films*, Vol.499, pp.174-178 , 2006.

[12] Ohdaira Y, Noguchi K, Shinbo K, Kato K, Kaneko F, “Nano-fabrication of Surface Relief Gratings on Azo Dye Films Utilizing Interference of Evanescent Waves on Prism”, *Colloids and Surfaces A: Physicochem. Eng. Aspects*, Vols.284-285, pp.556-560, 2006.

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