The 7th International Symposium on the Science & Technology of Light Sources

Kyoto–Japan
27th–31st August 1995
August 28, Morning
9:00 - 12:30

Session 1
(Fluorescent lamps)
Chairman: R. Itatani

1:1 Lighting Industries in Japan (Introductory Lecture)
T. Hanada

2:1 Low Power Compact Electrodeless Lamps
D.O. Wharmby, S-A El-Hamamsy

3:L Measurement on the Philips QL-Lamp for Comparison with
The Developed Model
J. Jonkers, M. Bakker, J.A.M. van der Mullen, D.A. Benoy,
K.T.A. Burm, D.C. Schram

4:P Bistable Dimming Behavior of Fluorescent Lamps Caused by
Electron-Attaching Contaminants
J.P. Waymouth

5:P Starting Time Measurement of Non-preheated Electronic
Compact Fluorescent Lamps
T. Yasuda, H. Ito

6:P Thermionic Emission Characteristics of Preheated Cathode
Fluorescent Lamps
M. Myojo, I. Okuno

7:P Effect of Anode Current on the Position of Cathode Hot Spot
Li Xianli

8:P Investigation on the Electron Energy Spectrum of Compact
Fluorescent Lamps
N.L. Bashlov, V.M. Milenin, G.Ju. Panasjuk, N.A. Timofeev

9:P Investigation on the Electrokinetic Characteristic of
Compact Fluorescent Lamps
N.L. Bashlov, V.M. Milenin, G.Ju. Panasjuk, N.A. Timofeev

10:P Low Power Super Compact Fluorescent Lamps with Higher
Luminous Efficacy
Daoyu Fang, Shenghe Song
11:P Improvement of The Starting Property of The Electrodeless Fluorescent Lamps in Dark Ambient
M.Kotani, M.Shinomiya, M.Myojo, T.Namura

12:P Characteristics of Plasma in RF Electrodeless Discharge
I.Mogi, Y.Yabumoto, G.Kanai, T.Kawabe

13:P Control of UV Radiation Emitted from Fluorescent Lamps
J.Kachidza, P.K.Whitman

14:L Performance Advantages of A Helical Compact Fluorescent Lamp
T.F.Soules, J.I.Barry, E.G.Steinbrenner, L.Kicher
August 28, Afternoon
13:30 - 17:00

Session 2
(Electronics and Related)
Chairman: John F. Waymouth

15:1 Progress in Electronic Devices for Lamp Operation
H. Nishimura

16:1 Experimental Study of The Fluorescent Lamp with An
Electronic Dimmer Controller
Guan-Chyun Hsieh, Eel-Peeng Tsai, Ping-Shen Sung

17:1 The Starting Situation of The Fluorescent Lamp Operated by
The Electronic Ballast
T. Uetsuki, N. Hayashida

18:1 Circuit Model of Fluorescent Lamp at High Frequency
Operation
M. Taihei, T. Urayama

19:1 The Effect of The Operating Frequency on The Dynamics of
The Barium Emissions and The Electrode Temperature of A
Fluorescent Lamp
K. Misono, Joseph T. Verdeyen

20:1 Color Control of Fluorescent Lamps
M. Aono, M. Jinno, M. Kubo, R. Itatani

21:1 Design Considerations for Color Temperature Variable
Fluorescent Lamps
S. Tanimizu, A. Kougami

22:1 Mode Transition in An Inductively Coupled Discharge
M. Monte, M. Matsuoka, M. Kawaguchi

23:1 A Study on Tri-Phase Source for Mass-using Discharge Lamps
Liancai Wang, Lixi Yan, Quingshan Zeng, Yongzhi Pang,
Zhezhang Wang

24:1 HPS Lamps without Mercury in Pulse-Current Operation
F. Serick, H. Kaase
25:L Built-in Starter with Pulse Cut-out for HID Lamps
S.Sasaki, T.Iida, R.Loane

26:1 Electronic Optimization of HID Lamps
K.Günther
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Session 3
(HID Lamps)
Chairman: Brian M. Ditchek

27: I High Intensity Discharge Lamps with Ceramic Envelopes
P.A. Seinen

28: L Short Arc Metal Halide Lamp with New Ingredients for LCD Projector
N. Takeuchi, Y. Kitahara, M. Wakamiya

29: P Characteristics of Ceramic Metal Halide Lamps and Its New Construction
M. Ichise, H. Haraguchi, S. Yamazaki

30: P Analysis of The Starting Condition for Metal Halide Lamp
M. Hirabayashi, Y. Kenmotsu, H. Takahashi, M. Sone

31: P Analysis of The Time-dependent Temperature Distribution of Compact MH Lamps during Warm-Up Phase
T. Saitoh, Y. Kurimoto, Y. Tsutsui

32: P Life Performance Improvement of The Short Arc Metal Halide Lamp by DC Operation
T. Higashi

33: P Interaction between Arc-tube Radiation and Barium Film in A High Pressure Sodium Lamp
C. Carretti, S. P. Giorgi, P. Manini, A. Renzo

34: P Factors Influencing The Minimum Arc Sustaining Current
W. Yan, F. P. Dawson

35: P Progress in Sulfur Lamp Technology
B. P. Turner, M. G. Ury, D. A. MacLennan, Y. Leng

36: P Low Power Microwave Discharge in Sulfur Lamps
A. N. Didenko, G. A. Lyakhov, K. F. Shipilov, E. A. Vinogradov

37: P Pulsating Operation of Electrodeless HID Lamp
K. Shimizu, I. Yokozeki, K. Uemura, A. Ito, A. Inouye
38:P Extrapolation of Radial Temperature Profile in High Pressure Mercury Lamps
B. Freisinger, G. Hartel, H. Schöpp

39:P Utilization of HID Illumination in Medical Diagnostics and Treatment
C. N. Stewart, D. M. Rutan, W. H. Lagerway,

40:P On The Calculation of The Mercury Distribution in Vertically Operating High Pressure Mercury Discharge Lamps
K. Charrada, G. Zissis

41:L The Ignition Characteristics of Electrode-less HID Lamp
S. Ukegawa, S. Wada, A. Okada, M. Kotani

42:I Novel Microwave Powered High Intensity Discharge Lamps
W. P. Lapatovich
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Session 4
(Excimer, Dielectric Barrier Discharge and Xe Discharge)
Chairman: A.G. Jack

43:1 Recent Progress of Excimer Radiation
   — Research, Development and Application —
   M. Obara

44:L A Flat Fluorescent Lamp with Xe Dielectric Barrier Discharges
   T. Urakabe, S. Harada, T. Saikatsu, M. Karino

45:P Development of Ar, Kr Excimer Lamps Using Dielectric Barrier Discharge
   H. Sugahara, Y. Ohnishi, H. Matsuno, T. Igarashi, T. Hiramoto

46:P Measurement of Single-Excimer-Filaments in A Barrier Discharge at Various Frequencies and Different Mixtures
   S. Kaiser, H. P. Popp, E. Arnold, K. J. Dietz, A. Hofman

47:P Dynamics of The Discharge Pumping in An ArF Excimer Laser

48:P Multifrequency Laser Emission for Illumination Generated by Four-wave Raman Mixing
   H. Kawano, T. Imasaka

49:P The Relationship between Radiant Efficiency and E/P in XeCl, KrCl Dielectric Barrier Discharge Lamps
   Y. Aiura, H. Matsuno, T. Igarashi, T. Hiramoto

50:P Investigation of The Electrical and Optical Properties of Dielectric Barrier Discharges
   S. Müller, R. J. Zahn

51:P Modeling of Barrier Discharge Excimer Lamp
   A. Oda, Y. Sakai, P. Ventzek, H. Tagashira, H. Matsuno, T. Igarashi

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52:P  The Pulse Discharge Sources with VUV Continuous Spectrum Radiation  
Shaolong Zhu, Xiaoyong Zhou, Wei Zhou

53:P  Doped and Undoped Xenon Short Arc Lamps with Extremely High Spectral Radiance  
E.Smolka, A.Schnabl, F.Schilling

54:P  High-Radiance Lamps  
T.Hiramoto

55:L  Density of Excited Atoms and VUV Radiation in The Pulsed Xenon Medium Pressure Discharge  
E.Kindel, C.Schimke

B.Preston
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Session 5
(Modeling)
Chairman: R. Devonshire

57:1 Review of Discharge Modelling
G.G. Lister

58:L HID-Modeling and Experimental Assessment
H.G. Adler, R.W. Liebermann, R. Speer

59:1 Collisional-Radiative Model and Low Pressure Discharge: Population of Excited Atoms and Ionization Balance
T. Fujimoto

60:P Self-Consisting Finite Element Modelling of Axisymmetric High-Pressure Discharge Lamps
H. Wiesmann, M. Neiger

61:P The Development of The Simulation System for Analyzing HID Lamps
H. Takahashi, H. Azegami, M. Sone, Y. Kenmotsu

62:P Computer Model of The Gas Discharge in A Deuterium Lamp
G.R. Harris, A. Hartley, R. Devonshire

63:P An Investigation of The High Pressure Sodium Arc Simulation Model with Energy Balance Equations
T. Ishigami

64:P Experimental Modeling of The Fluorescent Lamp
Guan-Chyun Hsieh, Ping-Shen Sung, Eel-Peeng Tsai

65:P Analysis of The Inductively Coupled Electrodeless Discharge by The Equivalent Circuit
Y. Watanabe, H. Miyazaki

66:P Modelling of The Philips QL-Lamp
D.A. Benoy, K.T.A. Burm, J. Jonkers, J.A.M. van der Mullen
D.C. Schram
67:P  Halogen Lamp Computer Model Incorporating LTCE and Species Diffusion  
P.Heeley, D.D.Bruguier, R.Devonshire

68:P  Computer Modelling of Tungsten Transport in Halogen Incandescent Lamp  
P.Heeley, R.Devonshire

69:P  An Elementary Three-Zones Channel Type Arc Model of A High Pressure Rare Gas - Rubidium Halide Discharge  
N.Sewraj, J.J.Damelincourt

70:L  Unstable and Turbulent Gas Flows in Incandescent Lamps: Measurement and Modelling  
K.Joyce, R.Cairns, R.Devonshire, P.Heeley
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Session 6
(Diagnostics, Measurements and Miscellaneous)
Chairman: Rolf S. Bergman

71: I Spectroscopic Diagnostics of Glow Discharges
J.E. Lawler, N.D. Gibson

72: L Measurement of Ar Lowest Excited State Densities and
Temperatures in Ar and Ar–Hg Discharge
K. Yuasa, K. Yamashina, T. Sakurai

73: L An Investigation of Thermodynamic vs Kinetic Control
in Operating Halogen Lamps

74: P Spectroscopic Studies of High Intensity Discharge Lamp
M. Hamamoto, H. Yamasaki, T. Kai, K. Muraoka, T. Sumitomo, S. Wada

75: P Wall Effect on Optical Emission Spectroscopy
I. Arikata, T. Kubota, K. Amakawa

76: P A Versatile Manufacturing Test Cell for Low Pressure
Discharge Lamps
W. Yu, G. Gregory, P. Ingram, R. Devonshire

77: P Development of Spectrometer for NIR Region by New Method
T. Okura, Y. Yamaguchi, T. Ooka, T. Inoue, K. Uchida, T. Inoue

78: P Measurement of Hg6p3P0,1,2 State Densities in Low-Pressure
Ar–Hg Discharge Plasma Used for Liquid Crystal Display
Back-Lighting
M. Goto, T. Arai

79: P Cadmium Ion Lamps with High Radiant Efficiency
A. Yamaguchi, Y. Yasuda, T. Hiramoto

80: P High Power Continuous VUV Radiation of D2 – Hg Lamp
M. Kubo, I. Takahashi, M. Aono, R. Itatani

81: P Micro Hollow Cathode Array Discharge
W.W. Byszewski, K.H. Schoenbach, R. Verhappen, F.E. Peterkin
82:P Neon-Discharge Based Motorcar Stoplights  
F.A.S.Ligthart, J.Geboers,

83:P Carbon Emitters — New Aspect of Infra-red Technology  
K.J.Dietz, K.Schmitz, C.Zou, A.C.Dexter, A.Heaton, W.Jones

84:P The Infra-red Suppression in Incandescent Light from Submicron Holes  

85:P Mechanical Aspects of Coil Geometry  
B.van Bakel, E.Gerritsen

86:P Tensile Strength of W-Wire at High Temperatures  
H.Ikegami, T.Igarashi, T.Hiramoto

87:P Choice of Suitable Filling Pressure for (Halogen) Incandescent Lamps: Theoretical and Experimental Investigations  
A.Bodmer, M.Damm, R.Minder

88:P Investigation of Quality for Tungsten Halogen Lamps with Different Filled Gas Composition  
Chen Dahua, Zhan Yunxiang

89:P Investigation of Exhausting Process with Injecting Oxygen in Manufacturing Lamps  
Pan Zongqiao

90:P A 26 in. Full Color Plasma Display Panel: Design and Luminous Characteristics  

91:I The Progress of and Prospects for The Plasma Display  
H.Murakami
August 31, Morning  
9:00 - 12:00

Session 7  
(Materials and Environment)  
Chairman: S. Kamiya

92:I  Recent Progress in Ceramic Materials for Lamp Application  
K. Maekawa

93:L  The Characteristic Improvement of The Ceramic Metal Halide Lamp  
T. Takeji, S. Taniguchi, S. Mori, Y. Hida, K. Nakano, J. Honda,  
H. Takasu, H. Nagai, K. Hayashi

94:L  Multiplet Structure Calculations for Rare Earth Ions  
S. Itoh, N. Nameda

95:P  Designing and Synthesis of Blue Phosphors Whose Spectral Properties are Changing Continually and Its Influence on CRI of Three Band Phosphors Blend.  
Jinggen Huang, Xinghai Yu, Maofu Tong, Jianping Jiang, Zuquan Cai

96:P  The Rise of Ra by Improvement of Blue Alkaline Earth Aluminate Phosphor  
T. Hisamune, N. Kijima, S. Fujino, Y. Oguri

97:P  Red Emitting Phosphors for Three-Band Fluorescent Lamps  
Y. Sakakibara, A. Taya, N. Matsuda, H. Takemura

98:P  Luminance Degradation by Forming Eu$^{3+}$ Ion in Eu$^{2+}$ Doped Barium Magnesium Aluminate Phosphor  
S. Oshio, T. Matsuoka

99:P  Feasibility of The Two Photon Emission Atomic Phosphor  
M. Toho, H. Kimura

100:P  Optical Filters on Linear Halogen Lamps Prepared by Dip Coating  
G. Hebbinghaus, G. Frank, C. J. M. Denissen

101:P  Preparation of Cerium Oxide Thin Film and Their Optical Properties  
H. Maiwa, N. Ichinose
102:P  Improved Mercury Source and Getter Suitable for Fluorescent Lamps Manufacturing
   S.P.Giorgi, A.Schiabel, C.Boffito

103:P  A Study of Mercury Consumption in Fluorescent Lamps
   H.Tomioka, T.Higashi, K.Iwama

104:P  Reuse of Fluorescent Lamp Phosphors
   H.C.G.Verhaar

105:I  Environmental Aspects of Discharge Lamps
   H.P.Stormberg