

# Curriculum Vitae

## Professor Kunioki Mima

### **Current Positions:**

Professor, the Graduate School for the Creation of New Photonics Industries

Guest Professor, Institute of Fusion Nuclear, Universidad Politecnica de Madrid

### **Educations**

1968 Bachelor of Science, Faculty of Science Kyoto University  
1970 Master of Science, Graduate school of Science Kyoto University  
1973 Doctor of Science, Graduate school of Science Kyoto University

### **Employment history:**

1973-1974 Assistant Professor, Department of solid state physics, Faculty of science, Hiroshima University  
1975-1976 Assistant Professor, Faculty of Engineering, Osaka University  
1977-1978 Assistant Professor, Institute of Laser Engineering, Osaka University  
1978-1984 Associate Professor, Institute of Laser Engineering, Osaka University  
1984-2006 Professor, Institute of Laser Engineering, Osaka University  
1995-1999 Director, Institute of Laser Engineering, Osaka University  
2005-2009 Director, Institute of Laser Engineering, Osaka University  
2009-present Professor, the Graduate School for the Creation of New Photonics Industries  
2009-present Visiting Professor, Institute of Fusion Nuclear, UPM, Spain  
2009-present Professor Emeritus, Osaka University

### **International assignments**

1975-1977 Research Associate, Bell Telephone Laboratory, Murray Hill, N.J. USA

Research Associate, University of California, Los Angeles, USA

**Research keywords**

Nonlinear Plasma Physics, Laser Fusion, Magnetic Confinement Fusion, Relativistic Laser Plasma

**Specialized field**

Plasma Physics, Fusion Science

**Other activities**

- |                         |   |
|-------------------------|---|
| 1995-1999, 2005-2009    | Member of Osaka University Steering Committee   |
| 1996-2000               | Executive of the Japan Society of Plasma Science and Nuclear Fusion Research                          |
| 1998-2007               | General Co-chair of IFSA International Conference   |
| 2000-2009               | JSPS-CAS Member of Steering Committee of Core-University Program on Plasma and Nuclear Fusion         |
| 2005-2009               | Member of Steering Committee of US-Japan collaboration program on Nuclear Fusion                      |
| 2005-2009               | Member of Editorial Board of Nuclear Fusion, IAEA   |
| 2005, April-2009 March  | Executive of the Laser Society of Japan   |
| 2005, August-2009, July | Member of Steering Committee of National Institute of Fusion Science                                  |
| 2006, April-2009 March  | Member of Fusion Research Working Group under the Ministry of Education Science and Technology, Japan |
| 2006, December-present  | Adjunct member of Japan Academy of Science  |

**Awards**

- |      |   |
|------|---|
| 1990 | Fellows , American Physical Society   |
| 1993 | Award for Excellence in Plasma Physics Research, American Physical Society, USA           |
| 1995 | Osaka Science Award, Osaka Prefecture, Japan  |
| 2005 | Science and Technology Award, Minister of Education, Sport, Science and Technology, Japan |

2005 Fellow, Institute of Physics, UK  
2007 Edward Teller Medal, American Nuclear Society, USA

### **Invited Talks and Presentations (from 2004 to 2006)**

#### **2004**

June 20-27 The 11th advanced accelerator Concepts Workshop 2004  
August 20-29 22nd Summer School and International Symposium on  
the Physics of Ionized Gases  
September 13-18 16th ANS Topical Meeting on the Technology of Fusion  
Energy  
October 30-November 8 20th IAEA Fusion Energy Conference  
December 1-5 China-Japan Seminar on Laser Fusion Science and High  
Energy Density Plasmas

#### **2005**

January 16-20 New Frontiers of Plasma Physics-Relativistic Laser  
Plasma Interaction, Dusty and Space plasmas  
June 26- July 2 32nd EPS Plasma Physics Conference and 8th  
International Workshop on Fast Ignition  
July 4-8 14th International Laser Physics Workshop, Japan -US  
Workshop on Theory Simulation and Target Design of  
Fast Ignition  
July 12-13 19th International Conference on Numerical Simulation  
of Plasma and Asia Pacific Plasma Theory Conference  
September 3-11 IFSA International Conference 2005

#### **2006**

June 13-18 9th European Conference on Laser Interaction with  
Matter  
September 26-30 Fusion Power Associates Annual meeting and  
Symposium  
October 15-24 IAEA International Conference 2006  
November 6-7 Fusion Forum, Alberter, Canada

November 9-10 14th International Symposium on laser Spectroscopy

**2007**

September 10-15 5<sup>th</sup> IFSA International Conference, 2007, Kobe, Japan

November Fusion Forum, Ottawa, Canada

**2008**

October 13-17 IAEA Fusion Energy Conference, Geneva, Switzerland  
Memorial session lecture

**2009**

September 6-10 IFSA 2009, San Francisco USA, Key note lecture

**2010**

June 21-25 EPS-DPP, Dublin, Ireland, Invited talk

October 10-16 Fusion Energy Conference, IAEA, Tejeon, Korea,  
Summary Talk

December 7-10 International Toki Conference, Invited talk, Toki, Japan,  
Invited talk

**2011**

January 4-7 High Energy Density Winter School of Rutherford Appleton  
Laboratory, Lecture

**Publication list**

**Books:**

1. Parametric Instabilities and Wave Dissipation in Plasmas, in Hand Book of Plasma Physics vol.2, North Holland, (1984), K.Mima and K.Nishikawa (Ed. A.Sagdeev et al.)
2. Laser and Future Society, Mita Publish LTD, (edited by C.Yamanaka) (1986). ,
3. Free electron laser and its applications, Ohm LTD, (edited by K.Mima) (1990).
4. Laser Plasma Theory and Simulation, Harwood Academic Publisher, (1994).  
A.Nishiguchi, K.Mima and H.Baldis, Ed. V.S.Letokhov, C.V.Shank, Y.R.Shen, and H.Walther
5. High Field Science, Plenum Press, (2001). Ed.T.Tajima and K.Mima
6. Laser Fusion, Osaka University Publish, (2001). (Edited by S.Nakai)
7. Application of Laser Plasma Interactions, Taylor and Francis Group, (2008). (Edited by S.Elizeer and K.Mima)

## Papers:

- 1) Theoretical Study of Ultra-Relativistic Laser Electron Interaction with Radiation Reaction by Quantum Description, Keita SETO, Hideo NAGATOMO, James KOGA1) and Kunioki MIMA, Plasma and Fusion Research, vol 7, (2012) 2404010-1~4
- 2) Li distribution characterization in Li-ion batteries positive electrodes containing  $\text{Li}_x\text{Ni}_{0.8}\text{Co}_{0.15}\text{Al}_{0.05}\text{O}_2$  secondary particles ( $0.75 < x < 1.0$ ), NIMB, K.Mima, R.Gonzalez Arrabal, et al, Nuclear Instruments and Methods in Physics Research B 290 (2012) 79–84
- 3) Model for ultraintense laser-plasma interaction at normal incidence, J. Sanz, A. Debayle, and K. Mima, Phys. Rev. E 85, (2012) 046411.(7page)
- 4) Inertial fusion experiments and theory, K. Mima, V. Tikhonchuk, M. Perlado Nucl. Fusion 51 (2011) 094004 (9PP)
- 5) Inertial fusion power development: the path to global warming suppression, K.Mima, Nucl.Fusion, 50, (2010) 014006, (6pp)
- 6) Enhancing the Number of High-Energy Electrons Deposited to a Compressed Pellet via Double Cones in Fast Ignition, Cai HB, Mima.K, Zhou WM, et al., PHYSICAL REVIEW LETTERS, Volume: 102, 24, 245001, 2009
- 7) Quasi-static electromagnetic pulse generated by ultra-intense laser pulses Author(s): Nakamura T, Mima.K, EUROPEAN PHYSICAL JOURNAL-SPECIAL TOPICS Volume: 175 Pages: 195-198 AUG 2009
- 8) Fokker-Planck simulations for core heating in subignition cone-guiding fast ignition targets, Johzaki T, Nakao Y, Mima.K, PHYSICS OF PLASMAS Volume: 16 Issue: 6 Number: 062706 JUN 2009
- 9) Enhancing the Number of High-Energy Electrons Deposited to a Compressed Pellet via Double Cones in Fast Ignition Cai HB, Mima.K, Zhou WM, et al., PHYSICAL REVIEW LETTERS Volume: 102 Issue: 24 Article Number: 245001 JUN 19 2009
- 10) Implosion and core heating requirements in subignition experiments FIREX-I, Johzaki, T; Nakao, Y; Mima, K, PHYSICS OF PLASMAS, v115, 062702 1-2, 2008
- 11) Generation and confinement of high energy electrons generated by irradiation of ultra-intense short laser pulses onto cone targets, Nakamura, T; Mima, K; Sakagami, H; Johzaki, T; Nagatomo, H, LASER AND PARTICLE BEAMS, v126, 207-212, 2008

- 12) Phase space modulation of laser produced protons with a double-foil target generation of quasimonoenergetic proton beams, Zheng, J; Mima, K; Sheng, ZM; Li, YT, PHYSICS OF PLASMAS, v115, 053106 1-6, 2008
- 13) Magnetic-dipole vortex generation by propagation of ultraintense and ultrashort laser pulses in moderate-density plasmas, Nakamura, T; Mima, K, PHYSICAL REVIEW LETTERS, v1100, 205006 1-4, 2008
- 14) Lateral movement of a laser-accelerated proton source on the target's rear surface, Nakamura, T; Mima, K; Ter-Avetisyan, S; Schnuerer, M; Sokollik, T; Nickles, PV; Sandner, W, PHYSICAL REVIEW E, v177, 036407 1-5, 2008
- 15) Proton acceleration in the electrostatic sheaths of hot electrons governed by strongly relativistic laser-absorption processes, Ter-Avetisyan, S; Schnurer, M; Sokollik, T; Nickles, PV; Sandner, W; Reiss, HR; Stein, J; Habs, D; Nakamura, T; Mima, K, PHYSICAL REVIEW E, v177, 016403 1-5, 2008
- 16) Optimization of cone target geometry for fast ignition, T.Nakamura, H.Sakagami, T.Johzaki, H.Nagatomo, K.Mima, and J.Koga, Physics of Plasmas, 1031051-7 (2007),

and so on.

Total more than 430 papers in the period of 1970-2013