



* Centre For Plasma Research

Leader:
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Description of projects:

Established in November 2007, the CPR has attained international recognition as a leading plasma focus group in Asia and the world having delivered more than 160 papers, including 70 top level ISI journal papers and 53 Plenary/Keynote/Review papers at international conferences and having been awarded partnership in an IAEA Coordinated Research Programme together with other top international groups. CPR members play significant roles in the AAAPT having initiated its ICPSA series and have been invited to lead run research workshops in the USA, Italy, Singapore, Nepal and Turkey and to act in consultative roles to various international groups. The research has led to ground-breaking discoveries in radiation and ion beams scaling and radiative collapse in the plasma focus.

Research Members:

- Associate Professor Dr. Arwinder Singh
- Ir. Dr. Teh Thiam Oun
- Professor Dr. Lee Sing
- Associate Professor Dr. Chong Tet Vui
- Professor Dr. Saw Sor Heoh,
- Professor Dato' Dr. Roslan Abd. Shukor, (UKM)

Research Collaborators:

- Institute for Plasma Focus Studies (IPFS), Melbourne, Australia; KL, Malaysia and Singapore.
- Nanyang Technological University, National Institute of Education, Singapore.
- Universiti Putra Malaysia (UPM), Serdang, Department of Physics, Faculty of Science.
- University Teknologi Malaysia (UTM), Johor, Laser Centre, Ibnu Sina Institute for Scientific and Industrial Research (ISI-SIR).

Research Grant:

IAEA Grant - Contract No.16934-R1

Patent:

Patent Number: PI201570260

Selected Publications:

1. Effect of the Variation of Pressure on the Dynamics and Neutron Yield of Plasma Focus Machines

Arwinder Singh, Lee Sing, Sor Heoh Saw; IEEE Transactions on Plasma Science 45 (8), 2286-2291(2017); DOI: 10.1109/TPS.2017.2715802.

2. Numerical study on the variation of pressure on India Bhabha Atomic Research Center (BARC) an Imperial College plasma focus machines

Arwinder Singh, Saw Sor Heoh, and Lee Sing; AIP Conference Proceedings 1824, 030002 (2017); <https://doi.org/10.1063/1.4978820>

3. A Numerical Study on the Ion Production in the INTI International University Plasma Focus Machine using Nitrogen Gas.

Arwinder, Singh* and Teh, Thaim Oun and Ng, Xue Yinn and Ng, Chee An and Wong, Jun Wen and Saw, Sor Heon and Lee, Sing* (2018), Thai Journal of Physics, 35 (1). pp. 1-9. ISSN 0857-1449

4. Pinch Current Limitation Effect in Plasma Focus

S. Lee & S H Saw Applied Physics Letters 92, 021503 (2008), DOI:10.1063/1.2827579

5. Computing Plasma Focus Pinch Current from Total Current Measurement

S Lee, S H Saw, P C K Lee, R S Rawat & H Schmidt, Applied Physics Letters 92, 111501 (2008), DOI:10.1063/1.2899632

6. Neutron Yield Saturation in Plasma Focus-A Fundamental Cause

S Lee, Appl. Phys. Lett. 95 151503 (2009)

7. Scaling Laws for Plasma Focus Machines from Numerical Experiments

S H Saw & S Lee, *Energy and Power Engineering*, 65-72, (2010), DOI: 10.4236/epe.2010.21010

8. Characterising Plasma Focus Devices – Role of Static Inductance – Instability Phase Fitted by Anomalous Resistance

S Lee, S H Saw, A E Abdou & H Torreblanca, J Fusion Energy Volume 30, (4), 272-282, (2011), DOI 10.1007/s10894-010-9372-1

9. Nuclear Fusion Energy- Mankind's Giant Step Forward

S Lee & S H Saw, J Fusion Energy 30 (5) 398-403,(2011), DOI: 10.1007/s10894-011-9390-7

10. Focus Ion Beam Fluence and Flux –Scaling with Stored Energy

S Lee & S H Saw, Phys. Plasmas 19, 112703 (2012)

<http://dx.doi.org/10.1063/1.4766744>

