Scientific Entrepreneurship

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Abstract

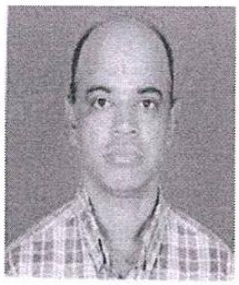
Our country has knowledge sources like IIT's, IPR, BARC,SINP,NPL,BIT's, etc engaged in frontier research. Hundreds of universities engaged in producing graduates, post graduates, doctorates in science and engineering. There are management institutes like IIMs, IIHT, etc are preparing inuumarable management trainees. Thousands of polytechnics and ITI's engaged in producing diplomas in engineering to facilitate lower l engineering staff.

The big giants like Godrej, L&T, TCS, Accenture, J&J etc run by professionally qualified engineers. Small and medium scale industry support all the major institutes and industries across the country. They take many challenges and deliver the products. SMSI according to government has turnover of 1-5crores. However if one looks at supporting small and medium scale industry (SMSI) have no qualified people run the industry. If one assumes a clear profit margin of 15%, gets paid decent sum of more than one lakh Indian rupees a month and in addition to ownership freedom. Government has come with scheme for employees to undertake entrepreneurship but this scheme is not finding many takers. However if we look at the owners of these industries, they just qualified to read and write or graduates from commerce or arts faculty or ITI running these industries. These industries lack of appreciation for quality control and proper finish to the products. Most of the time, these SMSI are engaged in stereo type production.

Government cannot keep employing the graduates they produce by creating new colleges, universities or institutions every year. Similarly large scale industry also cannot undertake to provide employment to upcoming graduates. This increases the unemployment in the country and consequently the economy. In western country private industry can carry out research, however in India government cannot recognize it. Research can only be done by premier institutes. In pharmaceutical sector, Indian industries have undertaken contract research from big industries from abroad and carried out on behalf of them and sold the research knowledge at premium price. Similarly in Information technology industry such an adventure was undertaken.

This presentation focuses opportunities for young scientists to become self-employed entrepreneurs. It will be extended on modalities for institutions can recognize these industries to provide encouragement. This may become true sense of "Applications".

Bio-data



1. Name : Dr. K. S. Ganesh Prasad

2. Date of Birth : 24 – 10 – 1961

3. Place of Birth : Bellary, Karnataka

4. Educational : M. Sc. from Gulbarga University, 1984

5. Qualification Ph. D. from Gujarat University, 1993.

6. Experience :

1. Lecturer at V. S. College, Bellary 1984-87

2. Research Scholar 1987-93

3. Post-Doctoral Fellow 1993-94

4. Fellow 1994-99

5. Associate Professor – I, 1999 – 2004

6. Post-Doctoral Fellow at Equipe Turbulence Plasma, Marseilles, Cedex, France 1995-97.

7. Head of Facilitation Center for Industrial Plasma Technologies (FCIPT), 2002

8. Associate Professor – II, 2004 onwards.

9. Principle investigator of more than 12 Projects

10. Delivered Invited plenary presentations at National Plasma Science conference, Vision 2020.

11. Guide for four Ph. D. Students.

12. Recipient of Dr. Vikram Sarabhai state award from Gujarat, 2003 for the work carried out on plasma pyrolysis of medical waste.

13. On sabbatical Leave to from IPR and started Shree Raghavendra Technical Services Pvt. Ltd from January 2006.

14. Full time in business of innovation and process development using plasma technology 2008 onwards.

List of Journal Publications

1. Spectral characteristics of fluctuations in laboratory plasma simulating features of bottom side of Equatorial Spread-F, G. Prasad, D. Bora and Y. C. Saxena, **Geophys. Res. Lett., 19, 241, 1992**.

2. K- spectra of Low frequency fluctuations in laboratory plasma simulating conditions of Equatorial Spread-F, G. Prasad, D. Bora and Y. C. Saxena, **Geophys. Res. Lett., 19, 245, 1992**.

3. Experimental study of low frequency turbulence in a toroidal plasma, G. Prasad, D. Bora, Y. C. Saxena and S. D. Verma, **Phys. Plasmas, 6, 1832, 1994**.

4. Spectral and dispersion characteristics of low frequency turbulence in a toroidal collisional magnetoplasma, G. Prasad, D. Bora and Y. C. Saxena, **Plasma Phys. Cont. Fusion, 3, 387, 1994**.

5. Analysis of self oscillations instability due to the plasma coupling with an emissive cathode sheath, C. Arnas Capeau, G. Prasad, G. Bachet and F. Doveil, **Phys. Plasmas, 3, 3321, 1996**.

6. Suppression of R-T type instability by velocity shear, S. Sen, P. K. Sharma, G. Prasad, Y. C. Saxena and D. Bora, **Fusion Engineering and Design, 34, 729, 1997**.

7. Experimental study of low frequency oscillation in dusty plasma, J. Pramanik, G. Prasad, A. Sen and P. K. Kaw, **Bull. American Phys. Soc., 45 357, 2000**.

8. Experimental observation of Shear waves in strongly coupled dusty plasmas, J. Pramanik, G. Prasad, A. Sen and P. K. Kaw, **Phys. Rev. Lett., 88, 175001, 2002**.

9. On the turbulent spectrum of Equatorial Spread F: A comparision between laboratory and space results, M. C. Kelley, T. L. Franz and G. Prasad, **J. Geophys. Res.** 107, SIA5, **2002**.

10. Plasma Pyrolysis of medical waste, S. K. Nema and G. Prasad, **Current Science, 83, 271, 2002**.

11. Experimental observation of dust mass rotation in dusty plasma, A. K. Agarwal and G. Prasad, **Phys. Lett. A309, 103, 2003**.

12. Experimental observation of dust-acoustic wave turbulence, , J. Pramanik, B. M. Veeresha, G. Prasad, A. Sen and P. K. Kaw, **Phys. Lett. A312, 84, 2003**

13. Experimental Studies on Atmospheric Pressure Glow Discharge for Drag Reduction and Microwave Invisibility", Srivastava A. K., Prasad G., Kumar V., Chawdhuri M. B., Prakash R., **J. Aero. Sci. and Tech., 57,17-23. 2005.**

14. "Observation of dust–dust scattering and molecule formation in a dusty plasma", , A.K. Agarwal and G. Prasad, **Physics Letters A, 341, 479, 2005**.

15. "Experimental observation of strong coupling effects on the dispersion of dust acoustic waves in a plasma", P. Bandyopadhyay, G. Prasad, A. Sen and P.K. Kaw, Accepted for publication in **Physics Letters A, 2007**.

16. "Characterization of Atmospheric Pressure Glow Discharge in Helium Using Langmuir Probe,Emission Spectroscopy, and Discharge Resistivity", Anand Kumar Srivastava, Manoj Kumar Garg, K. S. Ganesh Prasad, Vinay Kumar, Malay Bikas Chowdhuri, and Ram Prakash, **IEEE TRANSACTIONS ON PLASMA SCIENCE, VOL. 35, NO. 4, 1135, 2007.**

17. "Spatio-temporal dynamics of plasma spots in helium surface barrier discharge",A.K. Srivastava , G. Prasad, **Phys. Lett. A, 52, 1 – 6, 2008**

List of publications in International conference

1. "R –T instability favored drift wave turbulence in a Spread-F simulation experiment", G. Prasad, D. Bora and Y. C. Saxena, **Proc. Int. Conf. on Plasma Phys. Cont. Fusion, 3, 1575, 1992**.

2. "Night time Equatorial Spread-F simulation in a laboratory Plasma", G. Prasad, D. Bora and Y. C. Saxena, **Proc. Int. Conf. on Plasma Phys. Cont. Fusion, 3, 1583, 1992**.

3. "Study of low frequency oscillations and their non-linear interactions in toroidal plasma", G. Prasad, D. Bora and Y. C. Saxena, **Proc. Int. Conf. on Plasma Phys. Cont. Fusion, 3, 2021, 1992**.

4. "Study of non-linear structures in electrostatic flute type fluctuations", G. Prasad, D. Bora, Y. C. Saxena and G. C. Sethia, **Proc. Int. EPS. Conf. on Plasma phys. Cont. Fusion, II, 709, 1993**.

5. "Optical diagnostics based on the Lamb shift effect for the measurement of the micro-fluctuations of the local electric in a low density plasma", G. Prasad, G. Bachet and F. Doveil, **Proc. Int. Conf. on Plasma Phys. Cont. Fusion, 3, 2021, 1992**.

6. "Experimental Study of Alumina Spherodization using in-flight plasma reactor", G. Prasad, A. S. Prasad, P. M. Raole and P. I..John, **Proc. XIV Int. Conf. on Plasma Chemistry,** IV, **2101, 1999.**

7. "Dust acoustic and shear waves in strongly coupled dusty plasma", **AIP proceedings on dusty plasma, Durben, South Africa, 649, 231, 2002**.

8. "Experimental study of coloumb crystal formation in hollow cathode discharge", A.K. Agarwal and G. Prasad, **AIP Proceedings on dusty plasma, Durben, South Africa, 649, 261, 2002**.

9. "Experimental study of dust mass rotation in strongly coupled dusty plasma", A.K. Agarwal and G. Prasad, **AIP Proceedings on dusty plasma, Durben, South Africa, 649, 265, 2002**.

10. "Experimental study of dust acoustic waves in strongly Correlated regime", P. Bandyopadhyay, G. Prasad and A. Sen, **AIP Proceedings, 799, 137, 2005**.

List of Patents

1. "Hollow Anode Plasma torch", G. Prasad, A. S. Prasad and P. I. John, Indian patent **198006**.

2. "In-flight Plasma Reactor", G. Prasad, A. S. Prasad and P. I. John, Patent Pending, **587/MUM/202**.

3. "Bootstrap Pyrolysis system", G. Prasad, S. K. Nema, K. Modi and P. I. John, Indian patent **195943.**

4. "Raster Plasma torch", G. Prasad, D. Guru and P. I. John, Indian patent **195977**.

5. "Plasma Pyrolysis system", G. Prasad, S. K. Nema, K. Modi and P. I. John, Patent Pending, **762/MUM/2002**.

6. "Plasam Pyrolysis system and process for the disposal of waste using graphite plasma torch", Patent Pending **1391/MUM/2005.**

Membership of Academic Institutions

1. Life member of Plasma Science Society of India.
2. Life member of Bio-medical Engineering Society of India.

Process Developed for Industries

1. Nano-sized aluminum nitride synthesis using thermal plasma

2. Nano-sized Zinc Oxide synthesis using thermal plasma

3. Expanded plasma source for synthesis of nano-powders

4. Dissociation of zircon sand using Inflight arc reactor.

5. Silica Fusing using thermal plasma source

6. Destruction of butadiene using atmospheric glow discharge plasma

7. Medical waste destruction system developed and installed at 1. Goa, 2. Anandaman, 3. Himachal Pradesh and 4. Sikkim