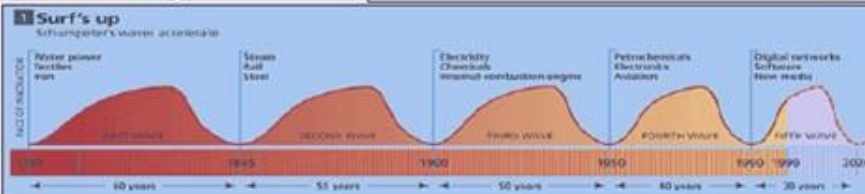


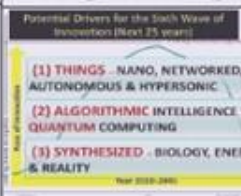


IEEE-IISc Student Branch

In Association with
CRAFITTI, Bangalore



One day workshop on (6WoI)
INVENTING in and for
THE SIXTH WAVE OF INNOVATION
ECE Dept, Indian Institute of Science
7 July 2018 (Saturday)



About the workshop

We have already entered or are entering the **Sixth wave of Innovation** by the year 2020. The current ongoing fifth wave of innovation (Schumpeter/Kondratieff Waves/Cycles- as they are called historically) started in 1990. It was driven by digital networks, software and new media, and is rapidly giving birth to the new wave – **The Sixth Wave of Innovation (6WoI)**.

- This new wave of innovation, we propose will be driven by
- (a) *Networked, Autonomous, Nano and Hypersonic – Things,*
 - (b) *Algorithmic Intelligence and Quantum Computing and*
 - (c) *Synthesized – Biology, Energy and Reality.*

The key skill needed in this rapidly changing and transformative new wave is our ability to “*invent strong, fast and continuously*”. Inventing is the process of providing “technical solutions” to “problems”. Inventions are those technical solutions that should pass the filters of newness/novelty, non-obviousness and having industrial application. If the solutions pass through these filters they are qualified for getting Patent protection as per the modern laws. Inventing methods however has not evolved from the serendipitous trial and error that has been the way humanity evolved. Although there are methodologies from psychology, such as lateral thinking and six thinking hats and historical and empirical analysis of inventions/patents such as TRIZ and its many variants such as USIT, ASIT etc, their proliferation, usage and importance has not been enough to upgrade our method of inventing from the trial-and error used by ancient man. The sixth wave of innovation is emerging in a rapid eclectic mix of trends and transformations – be it emergence of machine learning/deep learning, Industry 4.0, Digitalization, hypersonic vehicles, Nano-technology or Synthetic Biology. In this sixth wave, “inventing” will require much more nuanced, mature and structured approach to win instead of the ancient way of serendipity and trial and error.

One day workshop cum seminar will expose the participants to new ways and means of Inventing for the rapidly changing world and responding to the Sixth Wave of Innovation that has started embracing the world.

Schedule

- 8:30 -9:30 am: Registration
- 9.15am-9.30am: Inauguration: Chief Guest– Padma Bhushan Dr. A. Sivathanu Pillai, the Father of Brahmos Missile
- 9:30-10:30 am – Keynote address:
Dr. Prameshwar P Iyer, Past Chair, EntIISc, IISc Entrepreneurship Cell
- 10:30 -12:30 am: Workshop
(By Navneet Bhushan and Amit Mishra, Craftitti)
Waves of Innovation, the Sixth Wave (till 2045) - Industry 4.0, Algorithmic Intelligence, Quantum Computing, Synthesized Biology, Energy and Reality, How to Invent Strong (workshop using a patent)
Energy, Strength and Levels of Inventions
- 12:30 - 1:30 **Networking and Lunch**
- 1:30 - 2:00 pm : Inventing for Open Innovation
- Kanwal Rai, VP, Innovation, Wells Fargo
- 2:00 - 2:30 pm: Inventing for AI and ML/DL
- Ramprasad KR, ex Head of Wipro HOLMES Platform
- 2:30 - 3:00 pm : Inventing for Value - Product Design, Digitization and Business Models
Karthikeyan Iyer, VP, Products, Curejoy
- 3:00- 3:30 pm: Inventing for Internet of Energy, Microgrids and Wireless lighting
Priyaranjan Mishra, Craftitti
- 3:30 - 4:00 pm: The Framework for Inventing in and for 6th Wave of Innovation

Registration

Link: <https://goo.gl/forms/3GBkH4EDRGhUOVkF2>
Fees: Rs. 1000/-per participant; 500 for students/faculty/Startup.
For IEEE members: Rs. 750/- for IEEE Student members: Rs. 400/-.
No fee for IISc students, but they have to go to their mess for lunch.
The fee may be paid on the spot, but registration using above link is necessary.
The registration includes kit, lunch/tea etc, A participation certificate will be given.

Coordinators:

Dr. Priyaranjan Mishra, CRAFTITI (priya.r.mishra@ieee.org)
Kundan Kumar, IISc, (kundankumar@ieee.org)



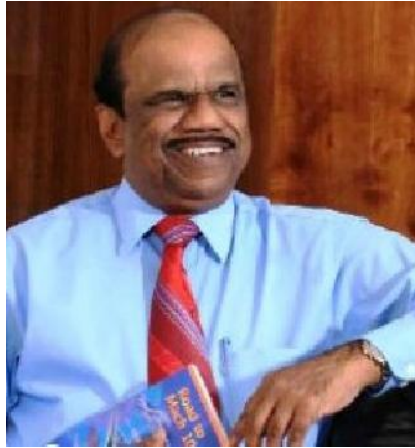
crafting innovation together

Our Chief Guest

About our Chief Guest Padma Bhushan Dr. A. Sivathanu Pillai



crafting innovation together



"It is my privilege and honour to introduce our Chief Guest – Padmabhushan Dr A. Sivathanu Pillai - Father of **BrahMos** - India's most innovative product conceived at the turn of the millennium and developed in the 21st Century by Dr. Pillai and his team. He has contributed to major Indian Innovation programmes - including Indian Space Research - especially SLV III, DRDO's IGMDP, and of course the world leader in the Family of Cruise Missiles - the BrahMos. Besides numerous awards and honours - President of India awarded the Padma Bhushan to Dr. Pillai in 2013 and President of Russia awarded the Order of Friendship in 2014.




crafting innovation together

<http://www.brahmos.com>

www.brahmos.com/people.php?id=2

Pillars of BrahMos

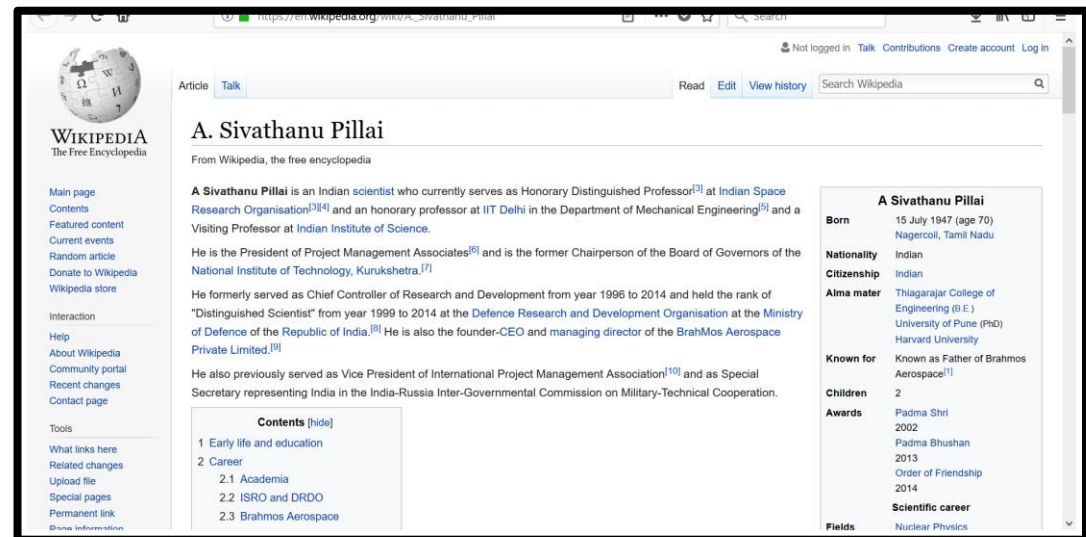
Dr. A Sivathanu Pillai



Dr. Apathukatha Sivathanu Pillai, a former Chief Controller, R&D, DRDO was the founder CEO & MD of BrahMos Aerospace. An electrical engineer from Madras University and management expert from Harvard Business School, he has contributed in India's major space research programmes along with Dr. Vikram Sarabhai, Dr. Satish Dhawan and Dr. A P J Abdul Kalam. During his tenure at ISRO he was a core team member of SLV III project. Dr. Pillai joined DRDO in 1986 and was the Programme Director of IGMDP under the leadership of Dr. Kalam. His most important contribution has been the development of critical technologies using a network of academic institutions, R&D laboratories, and industries through an innovative consortium approach and technology empowerment. Dr. Pillai evolved the unique concept of the most successful joint venture BrahMos, which is a world leader in the family of cruise missiles. He has been the prime force behind the Joint Venture from the Indian side right from its initial days, advocating "Mind to Market" concept for the joint venture.

Dr. Pillai is the author of many technical papers and has co-authored the books *The Path Unexplored*, *Thoughts For Change - We Can Do It* and *Envisioning an Empowered Nation* with Dr. Kalam. He has also written *Technology Leadership - A Revolution in the Making* and *Ocean Warfare - The Technology Waves*. A fellow of the National Academy of Engineering and a member of many other professional bodies, Dr. Pillai has been awarded the 'Padma Bhushan' and 'Padma Shri' by the Government of India. He has also earned several other honours for his invaluable contribution in the field of science and technology.

https://en.wikipedia.org/wiki/A_Sivathanu_Pillai



A. Sivathanu Pillai

From Wikipedia, the free encyclopedia

A Sivathanu Pillai is an Indian scientist who currently serves as Honorary Distinguished Professor^[3] at Indian Space Research Organisation^{[3][4]} and an honorary professor at IIT Delhi in the Department of Mechanical Engineering^[5] and a Visiting Professor at Indian Institute of Science.

He is the President of Project Management Associates^[6] and is the former Chairperson of the Board of Governors of the National Institute of Technology, Kurukshetra.^[7]

He formerly served as Chief Controller of Research and Development from year 1996 to 2014 and held the rank of "Distinguished Scientist" from year 1999 to 2014 at the Defence Research and Development Organisation at the Ministry of Defence of the Republic of India.^[8] He is also the founder-CEO and managing director of the BrahMos Aerospace Private Limited.^[9]

He also previously served as Vice President of International Project Management Association^[10] and as Special Secretary representing India in the India-Russia Inter-Governmental Commission on Military-Technical Cooperation.

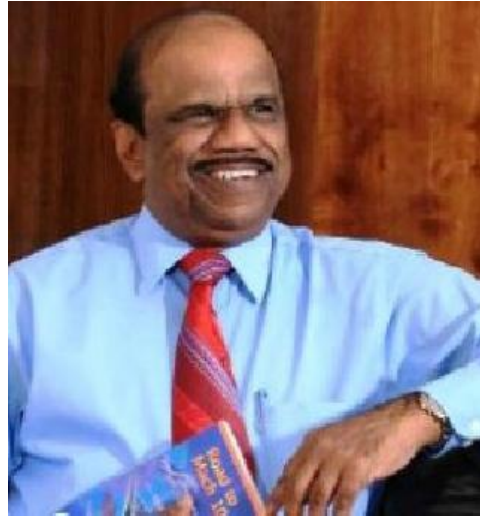
A Sivathanu Pillai	
Born	15 July 1947 (age 70) Nagercoil, Tamil Nadu
Nationality	Indian
Citizenship	Indian
Alma mater	Thiagarajar College of Engineering (B.E.) University of Pune (PhD) Harvard University
Known for	Known as Father of Brahmos Aerospace ^[1]
Children	2
Awards	Padma Shri 2002 Padma Bhushan 2013 Order of Friendship 2014
Scientific career	
Fields	Nuclear Physics

<https://en.wikipedia.org/>

Message from Padma Bhushan Dr. A. Sivathanu Pillai



crafting innovation together



Dear Mr Bhushan

The topic for the seminar is vital for the next generation of technology leaders who will make India the global economic power . New leapfrog thinking is need of the hour. I hope you will discuss these points in the seminar.

Regards

AS Pillai