# Role of Innovative Young Minds in Nation Building

Presentation in Chandy College of Engineering, Thoothukudi

By

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## PURSUIT OF SCIENCE FOR HUMANITY

The growth of science and technology has been phenomenal in the recent past, improving the quality of life of the human being.

Emergence of new technologies has opened up myriad of applications and now it is left to the ingenuity and imagination of the human mind to explore and exploit them further.

With the established base of multiple technologies all over the world, scientific minds have to come together for new innovations.







# The wonder that was India

"India's glorious past is embedded with a **Rich Scientific and Technological Heritage from the Vedic age** and is an inspiration to create a scientifically advanced and spiritually enlightened human society in which peace, prosperity and happiness together create a heaven on earth"

> AL Basham Reader in the History of India in the University of London Published in 1954















































TOMAHAWK Vs. BRAHMOS						
	TOMAHAWK		BRAHMOS			
Speed	0.8 Mach	2.8 Mach				
Time to hit the target	1 unit	1/3 <sup>rd</sup> (Faster engagement)				
Kinetic Energy	1 unit	9 times. (High Destructive Power)				
Target Dispersion (Moving targets)	1 unit 1/3 <sup>rd</sup> (Probability of hit is high)		pility of hit is high)			
Reaction Time 1 unit		1/3 <sup>rd</sup> (Pierces the Defence)				
Universality	Nil	Same system for sea & land targets				
Salvo	3 sec. (Target Specific)	2.5 - 3 Second interval on multiple targets (Land and Sea)				
War Effectiveness	Interceptable being subsonic	Undefeatable due to speed, stealth, electronic counter counter measures				
Supersonic Cruise Missiles: Competitor						
	5 OF DIFFERENT SHIP MISSII FS	Europe	"Perseus" (by 2030)			
0.6		USA	Project underway. Thrust for Hypersonic			
	0.38	Russia	Anti ship developed (Onix, Moskit)			
		China	Under development			
		S. Korea	Under development			
BrahMos Tomahawk Harpoon Club	Exocet Otomat	Taiwan	Prototype developed (120 Kms)			
BRAHMOS – WORLD LEADER IN CRUISE MISSILE FAMILY						

#### 







TE	CHNOLOGY 19 <sup>th</sup> Century	THROUGH AGES	21⁵\Century
Stone Age Bronze Age	Iron Age Chemica Age 1500 1800 1900	Nuclear Age Biotechnology Plastics Age Materials Age (0 1940 1960 1980 1990	Age Nanotechnology Ag Info & Knowledge Ag Convergent Technologies 2000 2010 202
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CIVILISATION CIVILISATION Pillar (Delhi) 912 BC Natural Sources & Craftsmanshi 5000 BC 2000 BC 0 1000 SOCIETY	P 1500 1800 1900 RI	COMPUTERS, DUSTRY RCRAFT LASER, GENETIC ENGG., INTERNET Synthesis, Engineering, combinator 1940 1960 1980 1990	EMERGENCE OF SMART & INTELLIGENT MATERIALS ial, simulation Strategies 2000 2010 2010





### NANO SPY FOR RECONNAISANCE



Artificial hummingbird

- ✤ Wingspan : 16 cm;
- Weight: 19 gms (less than an AA battery)
- Speed: 17 km/h (Three axes)

Source: DARPA

- Contains Nano batteries, motors, & communications systems; as well as the video camera payload
- Can climb and descend vertically; fly in all directions
- Manoeuvres using its flapping wings for propulsion and attitude control
- Could be deployed to perform reconnaissance and surveillance in urban environments or on battlefields



# NANO-BIO SENSOR FOR NEURAL DISORDER



#### **Neurological Diseases**

- Alzheimer's disease
- Parkinson's disease
- Epilepsy
- Lunatism

3 strained Pyramidal Neurons

2 mm high Receiving 10000 inputs



**Bio Chip for Neuron activation** 











#### **MESSAGE TO THE YOUTH**

"Success can only come to us by courageous devotion to the task lying in front of us. What we lack is perhaps courage and driving force, which take one anywhere. We have developed an inferiority complex. I think what is needed today is the destruction of that defeatist spirit. We need a spirit of victory, a spirit that will carry us to our rightful place under the Sun, a spirit which can recognise that WE, as inheritors of a proud civilisation, are entitled to a right place on this planet. If that <u>indomitable spirit</u> were to arise, nothing can hold us from achieving our rightful destiny."



Sir C.V. Raman In 1969

