



# KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY

INDIAN INSTITUTE OF SCIENCE, BANGALORE - 560 012

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Name : Shivakumar A.R.

Designation : Senior Fellow.

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Date of birth & Place : 01.07.1959, Ammanaghatta Gubbi tq.

Education: : Bachelor of Engineering in Mechanical Engineering, securing 1<sup>st</sup> class with distinction from *Mysore University*

Post Graduate in Business Management from *Bharathiya Vidya Bhavan*.

Financial Management Proficiency Programme under Continuing Education Course with overall performance of 'Very Good' from *Indian Institute of Science*, Bangalore.

Experience :



## *Karnataka State Council for Science and Technology*

Project Assistant	26.11.1981 to 24.09.1983	2 years
Fellow	24.09.1983 to 01.10.1993	10 years
Senior Fellow	Since 01.10.1993	

## *International Energy Initiative (Asia office)*

Programme Executive	01.07.1994 to 30.06.2000	6 years
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## *Indo Norwegian Environment Programme*

Programme Manager	01.07.2000 to 29.02.2004	4 years
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## *Karnataka State Council for Science and Technology*

Executive Secretary I/C	09.07.2007 to 05.05.2010	3 years
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Principal Investigator - RWH	Since 01.03.2004	
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### **Projects and Programmes carried out:**

1. Trainers' Training programme on 'sustainable rainwater harvesting and ground water recharge in developing countries – HRD and Technology Transfer, Hotel Atria, Bangalore
  2. Lake 2008: Conservation and Management of River and Lake Ecosystems – Symposium
  3. Rapid Urbanisation and Resiliency of Water Resources - Indo-US Joint Research Workshop
  4. Inventory of existing technologies for Biomass gasification
  5. Rainwater Harvesting Programme for Bangalore – INEP
  6. Rainwater Harvesting Programme for Tumkur – DST GOI
  7. Rainwater Harvesting Programme for Karnataka – RDPR GOK
  8. Solar Thermal Programme
  9. Biomass Gasification Programme
- .... **And many more**

### **Currently associated project / programmes:**

1. Rainwater Harvesting (RWH) Cell at KSCST
2. Demonstration of Micro Hydel Power Plants in Hilly Areas of Karnataka
3. "WASH" – Eco-Water Literacy Campaign 2009 – Karnataka
4. Support Network – Rainwater Harvesting, Ground Water Recharge and Water Management Programme for Bangalore City

### **List of publications & reports - 29**

1. A training programme for small-scale manufacturers of renewable energy devices in India  
Energy for Sustainable Development, Volume 1, No.6, March 1995.  
By: A.R. Shivakumar.
2. A Value addition to a modern house design: an integrated domestic Solar Water Heater  
Energy for Sustainable Development, Volume 3, No.1, May 1996.  
By: A.R. Shivakumar.
3. Attempting to fulfil rural energy needs with community participation  
Energy for Sustainable Development, Volume 3, No.1, May 1996.  
By: A.R. Shivakumar.
4. Rapid appraisal of Renewable Energy in Karnataka  
A study on the potentials for product innovation  
By: A.R. Shivakumar (KSCST), Erik Baumann and Bob Schulte (TOOL).
5. Large-scale Dissemination of Solar Water Heaters to Reduce Electrical Energy and Power for Water Heating – An Implementation Package with special reference to Karnataka  
By: A.R. Shivakumar, Sudhir Chella Rajan and Amulya K.N. Reddy.
6. Implementation of Rural Energy and Water Supply Utilities (REWSUs)  
By: A.R. Shivakumar, Sudhir Chella Rajan and Amulya K.N. Reddy.

7. Power Situation and Renewable Energy Role in Karnataka  
By: A.R.Shivakumar.
8. Wood gasifier (Kannada publication)  
Vignana Veenu, 5<sup>th</sup> Karnataka science congress, Belgaum, October 1993, Publisher -  
Karnataka Rajya Vignana Parishath  
By: A.R. Shivakumar.
9. Rural Energy and Water Supply Utilities an Overview of the Implementation Package  
By: A.R. Shivakumar, Sudhir Chella Rajan and Amulya K.N.Reddy.
10. “Rainwater - Kids club” Open Sesame, Deccan Herald, English daily, August 23,  
2003.  
By: A.R. Shivakumar.
11. Amruthavarshini – A guide for Rainwater Harvesting (Kannada and English)  
March 2005, Publisher - Karnataka State Council for Science & Technology  
By: A.R. Shivakumar.
12. Rainwater Harvesting - Bangalore Experience
  - a. “S&T Interventions in addressing problems of contamination of drinking  
water and water scarcity” Hyderabad, November 09 – 10, 2005.
  - b. “Water 2006” International conference on water issues, Auckland, New  
Zealand, August 01 – 04, 2006.
 By: A.R. Shivakumar.
13. Bangalore to Bijapura – Ten success stories on RWH (Kannada Publication)  
“Karnataka Vikasa” February 2006, Monthly Magazine of Rural Development and  
Panchayat Raj Department, Government of Karnataka.  
By: A.R. Shivakumar.
14. “Nanu mathu neeru nadedubanda daree” – A story on traditional water supply and  
RWH (Kannada Publication)  
“Karnataka Vikasa” April 2006, Monthly Magazine of Rural Development and  
Panchayat Raj Department, Government of Karnataka.  
By: A.R. Shivakumar.
15. “Haleya nenapu” – A story on self reliant water supply and RWH  
(Kannada Publication)  
“Karnataka Vikasa” May 2006, Monthly Magazine of Rural Development and  
Panchayat Raj Department, Government of Karnataka.  
By: A.R. Shivakumar.
16. “Vidana Soudadalli Maleneera Suggi” – Rainwater Harvesting in Vidhana Soudha  
(Kannada Publication)  
“Karnataka Vikasa” June 2006, Monthly Magazine of Rural Development and  
Panchayat Raj Department, Government of Karnataka.  
By: A.R. Shivakumar.
17. “Suvarna Jala” – Rainwater Harvesting in Rural Schools of Karnataka  
(Kannada Publication)  
“Karnataka Vikasa” August 2006, Monthly Magazine of Rural Development and  
Panchayat Raj Department, Government of Karnataka. - By: A.R. Shivakumar.

18. “World’s largest rainwater harvesting project in Karnataka”  
“Current Science” VOL. 92, NO. 2, 25 JANUARY 2007  
By: A.R. Shivakumar.
19. “Institution - Karnataka State Council for Science and Technology”  
“City Manager” VOL. 11, NO. 1, Apr - June 2006 A quality newsletter from the City Managers’ Association, Karnataka.  
By: A.R. Shivakumar.
20. “When the well’s dry, we know the worth of water”  
“Deccan Herald” Spectrum Tuesday, April 10,2007  
By: A.R. Shivakumar.
21. “Namma Chavani Namma Neeru” – Rainwater Harvesting (Kannada Publication)  
“Janapada” June 2007, Monthly Magazine of Information Department, Government of Karnataka.  
By: A.R. Shivakumar.
22. “Maleneerina Suggi” – Rainwater Harvesting (Kannada Publication)  
“Yojana” June 2007, Monthly Magazine of Ministry of Information and Publicity, Government of India.  
By: A.R. Shivakumar.
23. “Ani Aniuu Anthargangeyagali” – Ground Water Recharge (Kannada Publication)  
“Janapada” July 2007, Monthly Magazine of Information Department, Government of Karnataka.  
By: A.R. Shivakumar.
24. Revelation in Bangalore Water Supply:  
“A Sustainable Water Management Strategy for Emerging Greater Bangalore”  
Paper presented at the Government of Karnataka Workshop “Agenda for Bangalore Infrastructure Development” (ABIDe), NIAS, IISc Campus, on 28<sup>th</sup> June, 2008.  
By: A.R. Shivakumar.
25. Inventory of Existing Technologies on Biomass Gasification – A Status Report 2008,  
Department of Science and Industrial Research, Government of India.  
By: A.R. Shivakumar, S.N. Jayaram and S.C. Rajashekar
26. “Energy Efficiency at Home – Concept of Sustainable Living”  
Paper presented at the Workshop “Design beyond Sustainability 08” Centre for Green Building Materials & Technology and KSCST, 7<sup>th</sup> - 10<sup>th</sup> Dec, 2008.  
By: A.R. Shivakumar.
27. “Impact of Urbanization on Water Supply – Centralized Supply versus Sustainable Decentralized Model in Bangalore Context”  
Paper presented at the Workshop “US – India Collaboration on Rapid Urbanization and its Resilience” IISc Campus, 14<sup>th</sup> - 19<sup>th</sup> Dec, 2008.  
By: A.R. Shivakumar.
28. “A Sustainable Water Management Strategy for Emerging Metros in India”  
‘A Case Study of Bangalore’

Paper presented at the “National Conference on Urban Water Management – Challenges and Options” Dec. 13-15 2009, Bangalore, India.  
By: A.R. Shivakumar.

29. “Rainwater Harvesting and its Initiatives in Bangalore”  
Paper presented at the “National Seminar organized by Environment Association of Bangalore, ISRO at NIAS” on June 12th 2010, Bangalore, India.  
By: A.R. Shivakumar.

## **EQUIPMENTS / PROCESS DEVELOPED - 7**

1. Raspodar Machine
2. Integrated Solar Water Heating System
3. Low Wattage High Efficiency Electric Water Heater (Patent Regd. by NIF)
4. Coconut Frond Shredder [Patent No. IN 208703](#)
5. PopUp filter for Rainwater Harvesting (Under consideration for [Patent](#))
6. Water Treatment for Bacteriological Contamination using Silver metal (Under consideration for [Patent](#))
7. First Flush Lock and Diverter for Rainwater Harvesting (Under consideration for [Patent](#))

## **LECTURES, PRESENTATION & PROGRAMMES - 250**

(Outreach Activities - PPT, TV, Radio etc.)

## **PAPERS PRESENTED ABROAD - 4**

1. International Symposium “Participatory Technology Development” Innovation through dialogue  
Amsterdam, The Netherlands, December 10 - 17, 1993.
2. International Workshop on the “Design, Performance and Marketability of Biogas Systems”  
University of Ruhuna, Sri Lanka, May 10 - 14, 1999.
3. International conference “Water 2006” on water issues  
Auckland, New Zealand, August 01 - 04, 2006.
4. International Exposure Visit to Israel “Technion Institute of Technology”  
Haifa, Israel, November 01 - 06, 2009.

## **AWARDS:**

Recipient of  
**“NATIONAL AWARD FOR INVENTION OF THE HIGH EFFICIENCY  
LOW WATTAGE ELECTRIC WATER HEATER”**

Awarded by the union government of India  
Department of science and technology  
For the year 2001

Recipient of

**"CITIZEN EXTRAORDINARY - VOCATIONAL EXCELLENCE"**

Awarded by the Rotary International

For the year 2007

Recipient of

**"INDEPENDENCE DAY AWARD FOR MERITORIOUS ACHIEVEMENT"**

Awarded by His Excellency the Governor of Karnataka

For the year 2007

Researched on various techniques of Rainwater Harvesting over a decade and successfully implemented Rainwater projects under various Government and Foreign assisted programmes.

**Design, plan and execution of Rainwater Harvesting projects for the following landmark buildings in Karnataka:**

Vidhana Soudha, High Court, GPO, Rajajinagar Fire Station, Kidwai Memorial Hospital, Gandhi Krishi Vignana Kendra, Kengeri Beedi Workers Housing, Bangalore Mahanagara Palike Head Office, BWSSB Banashankari Office, etc.

**Associated as planner and technology provider for the following major programmes in Karnataka :**

Rural Development and Panchayat Raj Government of Karnataka - Rainwater Harvesting Project.

Rajeev Gandhi Housing Corporation, Navagrama Projects.

Rainwater Harvesting Resource Centers at Mahathma Gandhi Regional Institute for Rural Energy and Development and Nirmithi Kendras at 27 districts of Karnataka.

Rainwater Harvesting in 23,000 Government Schools in rural Karnataka.

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