

NIAS Newsletter

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NATIONAL INSTITUTE OF ADVANCED STUDIES, BENGALURU, INDIA 560012

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From the Director, NIAS

I take the opportunity to wish you all a blissful and successful New Year. We, at NIAS, are delighted to share our happiness as in 2016. Our colleagues achieved many goals expressed in the vision and mission of the Institute. The bedrock guidelines for NIAS are Dialogue based convergence, Creating Excellence in pursuits and Leadership. We believe that NIAS occupies global place with unique and eminent status through interdisciplinarity in studies based on the strengths of expertise and searching for solutions with respect for academic and humanistic concerns.

The year 2016 was a remarkable year for all of us with several important events showcased at NIAS including international conferences, consultative workshops, memorial lectures, art and culture workshops and lectures, foundation day programmes, institution of "Distinguished Honorary Fellowships", inter-institutional MoUs for collaborative work, start of TCS Knowledge Centre Building, and many other notable initiatives (www.nias.res.in). The NIAS PhD

Programme continues to grow from strength to strength and create young leaders who are trained for exploring complex problems facing the society. These students are well versed in social, philosophical, cultural, national contexts, S&T, etc. During the last part of the year 2016, we completed an important exercise. For the first time of NIAS history, Research Programmes were peer reviewed. Now, we are getting ready for institutional review.

As new year is commencing, the goals in front of NIAS are manifold, but all aimed at creating a robust knowledge society in India through healthy dialogues based solutions and partnership collaborations going beyond boundaries, and at the same time including culture, humanities and sciences with equal sensitivity but specific strengths.

On behalf of the Faculty, Students and Staff of NIAS, I wish you all a delightful New Year 2017. We need and deserve your support and guidance.



Prof Baldev Raj



In This Issue...

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- PhD Programme Updates
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Featured Research Programme

NIAS has an integrated approach to the study of the intersections between science and technology, social issues, humanities and leadership. The philosophy underlying NIAS is given shape by its research through the Research Programmes housed by the Schools. In this issue of NIAS Newsletter we feature the NIAS-UNDP Policy Research Initiative on Inequality and Human Development Programme.

Even as India battles to break the stranglehold of poverty it is important not to let slip under the radar the sometimes very different effects of inequality on human development.

- Narendar Pani

Head, NIAS-UNDP Policy Research Initiative on Inequality and Human Development Programme

NIAS-UNDP Policy Research Initiative on Inequality and Human Development

The NIAS-UNDP Policy Research Initiative on Inequality and Human Development aims to develop policy options based on multidisciplinary and empirically consistent conceptualization of inequality and to contribute towards public discourse to enable more informed policy choices. This is a new programme and was launched with the signing of MoU between National Institute of Advance Studies and the United Nation Development Programme in 2015. The motivation for this collaboration between NIAS and the United Nations Development Programme (India) stems from the concern that popular discourse on inequality in India has tended to be fragmented. This policy research initiative will expand our ability to understand the dynamic effects that inequality has on other processes in society such as on growth, individual aspirations, and rise of regional identities.

The immediate task the initiative has set for itself is to address the inequalities that arise from the process of transformation of the Indian economy from an agrarian one to a non-agrarian one. This transition has been known to have massive social and economic consequences when it occurred in other parts of the world, going all the way back to the distress of the industrial revolution. And no other large country has made this transition in a democracy. It thus becomes imperative to understand both the costs and consequence of this process if we are to manage the strains

such transitions inevitably cause. As a step towards such an understanding, the NIAS-UNDP Policy Research Initiative on Inequality and Human Development has, with the financial support of TCS launched two specific projects, one to understand the effects on inequality of the transformation from a predominantly rural economy to a mainly urban one; and another to understand one of the most discussed possible consequences of this process: farmers' suicides.

Programme Members

Narendar Pani, Professor
Abha Rao, Assistant Professor
Debosree Banerjee, Post-Doctoral Associate
Sumedha Bajar, Post-Doctoral Associate
Viswesh R, Research Associate
Monika Yadav, Research Associate
Priya M, Research Associate
Shihabudeen Paikam, Research Associate
Ankita Rathi, Doctoral Student
Meera Sudhakar, Doctoral Student

Inequalities and the Demand for Non-Farm Occupations

The primary aim of this project is to capture the effects on inequalities and the demand for non-farm occupations resulting from the dynamics of the transformation of the Indian economy from an agricultural one to one dominated by urban industry and services.

The transition from an agrarian economy to a non-agrarian one has taken different routes and with differing momentum across the varied regions of the country. These differences are reflected in the nature and extent of the labour being released from agriculture, the type of jobs that are emerging to absorb them, and the location of these jobs. These differences can also reflect the inequalities that result from the specific processes of transition from an agrarian economy to a non-agrarian one in different parts of the country. A comprehensive statistical package based on secondary data at the district level has been generated using Census data at district level over the period 2001 and 2011 that looks at this process in India.

This study has helped address one of the major challenges that crops up in moving away from agriculture and increasing employment share in the other sectors: one of the differences in skillsets required for each of these sectors. A working paper by Sumedha Bajar (under review) develops district

level estimates of nature of the demand for skills in the rural economy over the period 2001 to 2011. It goes on to estimate the extent and location of the demand for skills within agriculture, the extent and location of the demand for non-farm skills in the rural economy, and the extent and location of the demand for skills from those moving out of the rural economy. It finally argues that an effective skill development programme must be more sensitive to the challenges that are emerging in rural India.

After identifying patterns of transition, it was found that those moving out of main agriculture may not leave agriculture completely, but continue working as marginal workers. These consist of people who might be working in urban centres for a few months and then return to the village to work as marginal agriculture labour or as marginal cultivators on family farms, implying that migrant workers in the city do maintain their links with the village. A multi-sited ethnographic study is underway starting with a construction site in Bengaluru involving migrants from different regions in India. This research follows the circuitous journey of the migrant workers' population between their city of employment (Bengaluru, in this study) and the villages they come from. The part of the study conducted so far by Monika Yadav looks at migrant construction workers from northern belts of the country and rural Karnataka employed as informal workers through a chain of sub-contracting in the construction industry in Bengaluru.

Inequality and Farmers' Suicides

The process of transforming an agrarian society to a non-agrarian one also has non-economic consequences. Inequalities arising from agrarian transition could have effects that are social and psychological. The most widely recognized examples of this pressure are in the many cases of farmers' suicides. Using data from National Crime Record Bureau on Farmers' suicides and population data from Census of India for the period 1995 to 2014, an attempt has been made to provide an understanding of relative vulnerabilities of different groups to suicide, the regional dimension of the problem, and the possibility of economic inequality being a contributing factor to this phenomenon. The results of this study have been published as NIAS Working Paper titled *'Inequality and Farmers' Suicides in India'* by Debosree Banerjee. It has been found that farmers are not the most vulnerable group to suicide in the twenty year period. For the nation as a whole, housewives have a higher suicide rate than farmers. Thus, any meaningful policy to address farmers' suicides must take into account the regional variation in the phenomenon. There is a pattern to this variation which has been captured by the five-fold classification of the states according to the rates as chronic, very acute, acute, prone

and less prone. Rural poverty and rural inequality are both observed to be contributing to farmer suicides but rural inequality seems to have a more significant impact when compared to rural poverty.

Following from this secondary data analysis, the overall data for the states for twenty years is being used to extend the Durkheim's theory of suicides to explain the macroeconomic causes of farmers' suicides in India. This will help develop an econometric model to understand what the macro picture tells us about the causes of farmers' suicides and forms the basis of second working paper by Debosree Banerjee and Viswesh Rammohan.

The study has also found that after classifying states into five categories to get the extent of the crisis in farmers' suicides in a state, Kerala shows up as a state with a 'chronic' problem of persistence of severity of farmers' suicides. In order to follow up on this, the farming population to non-farming population suicide rate was estimated district wise for Kerala. Three districts viz. Palakkad, Malappuram and Kollam have shown the farmer suicide rate to be greater than the non-farming suicide for a consistent period of more than eight years, out of a possible ten. The farmer suicide rate in these districts is also considerably higher than the non-farmer suicide rates by a factor of two or more. This is being followed up with village level surveys by Shihabudeen for a nuanced understanding of farmers' suicide problem in Kerala.

Multidisciplinary Features of the Programme

Both the projects within this programme have multidisciplinary approaches built into them. Secondary data analysis will provide a macro understanding of the issues which will then be followed through by village surveys and ethnographic studies. Census data has been used for estimating the extent of rural transformation occurring at district level in India. Based on these results, village level surveys are to be conducted in selected districts, which have observed an increase in people working in agriculture; districts which have seen people leaving agriculture but staying within rural areas; and districts which observe an increase in marginal workers (people working elsewhere but not leaving the rural as their base); and finally districts which have seen people leave the rural workforce altogether. Ethnographic study is underway to understand the nature of circulatory migration in the construction sector for migrants coming to Bengaluru for work from Jharkhand and Karnataka.

Secondary data from National Crime Records Bureau has been used for comparing farmers' suicides across states in India from 1995 to 2014. The results from this study have

thrown light on trends in farmers' suicides across states which will be used for conducting village studies in states having higher persistence of severity of farmers' suicides, namely, Kerala, Maharashtra and Uttar Pradesh.

Outreach

As part of NIAS-UNDP Policy Research Initiative on Inequality and Human Development, public lecture by Sudhakar Varanasi was organised on August 9, 2016. The lecture was titled "Working with head and heart aligned: The story of the

emergency services project 108 in India" and talked about Emergency response services which were started in 2005 in Andhra Pradesh with modern systems and technology to reach even the remotest villages. This free service has scaled up remarkably and is now available in more than 20 states and reaches about 800 million people in India and has saved more than a million lives in the past one decade.

Sumedha Bajar participated in NIAS- Wednesday Discussion Seminar and presented her work titled "The 'where' of Skill Development" on October 26, 2016.

Doctoral Scholars

The programme includes two doctoral scholars. Ankita Rathi is working on 'Transition from village to town: A study of two settlements in Punjab'.

Meera Sudhakar's has finished her coursework and will start working on "Understanding Social Processes in Policy Implementation – Case Study of a Re-distributive Policy in Karnataka".



Team Members



Narendar Pani

Professor and Head

Narendar Pani is an economist by training who takes a multidisciplinary approach to issues of Indian political economy. In this effort he has relied on a method derived from the writings of MK Gandhi. He has over the last three and a half decades held positions in academia and the media.

**Abha Rao**

Assistant Professor

Abha is trained in a variety of social science disciplines, including family studies, human development, anthropology, and psychology. She works in the area of rural health to explore how decisions related to family health are made at the level of the household and community, to understand how these choices are influenced by larger socio-cultural and structural factors, and to examine their role in the production of health inequities.

**Debosree Banerjee**

Post-Doctoral Associate

Debosree has PhD in Economics from University of Goettingen, Germany. Her topic of research was Agricultural Commercialisation and Gender. Her MPhil in Economics is from Jawaharlal Nehru University, Delhi. She was awarded scholarship from joint Japan/World Bank Graduate Scholarship Program and has worked as research associate at ICRIER and VHAI, New Delhi. Her research interests lie mainly in the field of Experimental Economics and development economics.

**Sumedha Bajar**

Post-Doctoral Associate

Sumedha obtained her PhD in Economics from Institute for Social and Economic Change (ISEC), Bengaluru in 2016. She worked on the topic "Infrastructure and Economic Growth: Evidence from India". Before joining NIAS she was working as Assistant Director at National Institute of Labour Economics Research and Development (under NITI Aayog) and has interned at places like UNCTAD, New Delhi and NCAER, New Delhi. Her research interests lie in the field of economic growth and looking at transition from rural to urban in India.

**Viswesh R**

Research Associate

Viswesh R obtained a MSc Physics from St Joseph's College, Bengaluru and has a Masters degree in Political Science from the Indira Gandhi National Open University (IGNOU). Previously, he has worked at the International Strategic and Security Studies Programme (ISSSP) at NIAS as well as the Asian Nature Conservation Foundation (ANCF). His research interests include questions pertaining to the Indian political economy and agrarian studies in India.

**Monika Yadav**

Research Associate

Monika has a Masters in Sociology from Delhi School of Economics. She completed her BTech in Engineering from National Institute of Technology, Kurukshetra. She has experience in working at sustainability management consultancy.

**Priya M**

Research Associate

Priya received her MA in economics from St Joseph's College, Bengaluru. She has done internships in the field of urban planning and urban studies.

**Shihabudeen Paikam**

Research Associate

Shihabudeen received his MA in Economics from Central University of Kerala and has extensive field work experience in Kerala.

PhD Programme Updates

TS Gopi Rethinaraj (Academic Head) Reports

The National Institute of Advanced Studies (NIAS) organized the Annual Student Colloquium featuring ongoing research work by the doctoral students on December 1 and 2, 2016. The annual colloquium is a part of the review of their progress as well as opportunity for the doctoral scholars to know each other's work and receive comments from other scholars. A total of 26 students presented their work in disciplines such as Sanskrit, Psychology, Archaeology, Heritage, Contemporary Physics, Economics, Education, Media, Behavioral Ecology, Climate change, etc. Faculty members, students, and experts from the other institutes attended the colloquium.

Sanam Roohi successfully defended her thesis titled "Giving Back: Diaspora Philanthropy and the Transnationalisation of Caste in Guntur (India)" and declared eligible for the award of PhD by the University of Amsterdam on December 6, 2016. Sanam Roohi is a research scholar from the School of Social Sciences in the Provincial Globalization (WOTRO) programme and worked under the supervision of Carol Upadhyia.

The following are some of the recent work published and presented by NIAS PhD students.

Naresh Keerthi

Bard of the meeting rivers –
Commingle literary streams in
Şađakşari's hybrid poetry - paper
presented at Preconference Session –
'Patterns of Literary Composition in a
Multilingual World', Annual Conference
on South Asia – University of Wisconsin-
Madison, October 19, 2016.

Can we think before we speak -
Bhartṛhari's philosophy of language –
Lecture as part of World Philosophy Day
seminar, NIAS and ICPR, November 17,
2016.

Prickly matters – the identification of
śalyaka in Sanskrit literature, Indian
National Science Academy, and IISER
Bhubaneswar, Bhubaneswar, December
28, 2016.

Workshop on Manuscriptology, Textual
Criticism and Palæography, B.L.
Institute of Indology and National
Mission for Manuscripts, IGNC, A,
September 10 to October 1, 2016.

Sreedhar Vijaykrishnan

Gave a talk on Elephant Conservation
Programme updates from Anamalais
at the Elephant Conservation Group
workshop at Kui Buri National Park,
Thailand between October 15 and 29,
2016.

Presented a paper titled Endocrine
Monitoring of Asian Elephants
in Modified Landscapes at the
International Elephant and Rhino
Research and Conservation Symposium,
held at the Wildlife Reserves, Singapore
between November 14 and 19, 2016.

Gave a Talk on Asian Elephant
conservation in the Western Ghats,
at the Singapore American School,
addressing high-school environmental
science students, on November 17,
2016.

Popular article titled *Pālakāpyarā
çīñthakalum samakālīna gaja
samrakshanavum paripālanavum* (on
current trends in elephant conservation
and welfare, in Malayalam) for an
annual publication, published by a
cultural group at Cochin.

Ekta Gupta

Participated in a Pre-symposium
Tutorial on UAC Remote Sensing and
Applications, December 6, 2016.

Participated in National Symposium on
Recent Advances in Remote Sensing
and GIS held at IIRS, Dehradun, which
is the annual convention of the Indian
Society of Remote Sensing (ISRS) &
Indian Society of Geomatics (ISG),
December 7 to 9, 2016.



"The NIAS PhD Programme is a unique training programme in the country that fosters interdisciplinary research and teaching skills. In keeping with the vision of the institute's founder JRD Tata and national skills development for building a better future, the NIAS PhD Programme encourages students to actively adopt a multidisciplinary approach to problem solving.

NIAS PhD students conduct their research and study in an environment free from the disciplinary constraints and get a broad exposure to ideas and research methods in the humanities, social sciences, natural sciences and engineering. This helps students to leave the institute as well-rounded individuals capable of working in a variety of professional and intellectual settings".

TS Gopi Rethinaraj, Academic Head, NIAS PhD Programme



Recent News

Training Programmes



The Fourteenth Annual NIAS-DST Training Programme on Multidisciplinary Perspectives on Science, Technology and Society Core Theme: Technology and Society (December 5 to 16, 2016)

Coordinator: Prof D Suba Chandran

NIAS-DST Training Programme on Policy for Science and Science for Policies (November 7 to 11, 2016)

Coordinator: Prof Sangeetha Menon

Conferences, Workshops and Meetings

Archaeological Survey of India, Bangalore Circle in collaboration with NIAS organised a **Workshop on Conservation of Excavated Sites "A Case Study of Exposed Jaina Remains"** at Aratipura, Mandya District, Karnataka. The workshop was organised as part of World Heritage Week Celebration (November 24, 2016).

Coordinator: Prof Sharada Srinivasan

A Seminar titled **Knowing and Being: Philosophical Foundations of Interdisciplinary Thinking** was organised on the Occasion of the World Philosophy Day (November 17, 2016) by the NIAS Consciousness Studies Programme. The event was sponsored by the Indian Council of Philosophical Research, New Delhi.

Coordinator: Mr Posina Venkata Rayudu

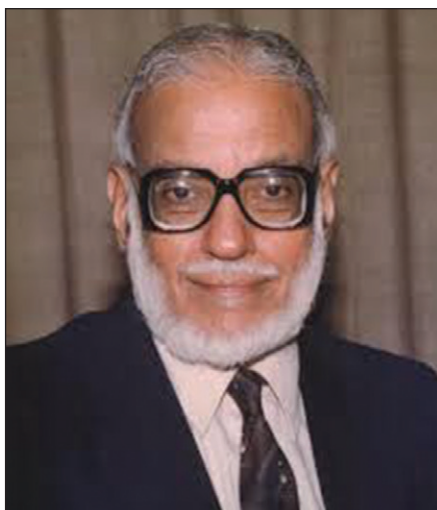
One-day Consultation on Future of River Basin: Looking beyond Cauvery (November 17, 2016)

Coordinator: Dr N Shantha Mohan

NIAS in collaboration with the National Academies, USA organised a dialogue on **Strategic Security Threats of the 21st Century** (October 5 to 7, 2016)

Coordinator: Prof Rajaram Nagappa

Condolences



Prof MGK Menon, member of the first Council of Management, NIAS passed away on November 22, 2016. We remember him with great respect and gratitude towards his association with NIAS.

Annual Memorial Lectures

TWELFTH RAJA RAMANNA MEMORIAL LECTURE

Prof G Padmanaban

Former Director, IISc and NASI
Platinum Jubilee Senior Scientist, Dept. of Biochemistry, IISc, Bengaluru
Science, Technology and Health

December 14, 2016



Public Programmes

Dr VK Aatre

Formerly Scientific Advisor to Raksha Mantri, Government of India
Science, Technology and the Future

December 15, 2016



Dr Jayadevi Jangamashetti

Dharwad, Karnataka
Hindustani Vocal Concert
December 13, 2016

Prof Narendar Pani

Professor, NIAS
Slapping a Giant: The Demonetization Gamble
December 9, 2016

Prof Jacques Zeelen

Faculty of Arts, University of Groningen, Nederland
Vocational Education: Exploring New Pathways for Craftsmanship in Different Continents
December 2, 2016

Dr Wayne Deans

Institute for Land, Water and Society, Charles Sturt University, Australia
The Principles of Redundancy
November 28, 2016

Dr Mukund Thattai

National Centre for Biological Sciences, Bengaluru
Turbocharged Evolution in a Bacterial Arms Race
Fourth FIRST (Forum for Interdisciplinary Research and Studies) Lecture
November 25, 2016

Prof Fazal Rizvi

Melbourne Graduate School of Education, University of Melbourne, Australia
Elite Schools in India and the Formation of Global Imaginaries
November 14, 2016

Kalamandalam Manoj and Team

Kerala
Panchavadyam
November 10, 2016

Dr A Sivathanu Pillai

Honorary Distinguished Professor, ISRO
Science, Technology and Innovation
November 9, 2016

Mr Joseph TK

Sharp Software Development India Private Limited, Bengaluru
TRIZ: A Methodology of Innovating Systematically for Scientists
November 8, 2016

Dr TR Gopalakrishnan Nair

Rector, Rajarajeswary Group of Educational Institutions and Adjunct Professor, NIAS
Silicon Brain: Horizons for Humanity
Third FIRST (Forum for Interdisciplinary Research and Studies) Lecture
October 28, 2016

Prof S Settar and Prof Sundar Sarrukai

NIAS
Discussion on Fire over Water- Issues in the Cauvery Conflict
October 24, 2016

NIAS-CSP Evening Philosophy Chat Series

Prof Anindya Sinha, Prof D Suba Chandran, Dr Nithin Nagaraj and Prof Sangeetha Menon, NIAS
Uncertainty: Are You Certain?
October 20, 2016

Ms Catherine Eagleton

British Library
British Library's Digitization and Digital Projects
October 13, 2016

Wednesday Discussion Meetings

Coordinator: Prof Sangeetha Menon

Dr TS Gopi Rethinaraj

Associate Professor, NIAS
Exposure to Ionizing Radiation at Low Doses: Risk Assessment and Public Health Regulation under Scientific Uncertainty
December 21, 2016

Prof Sindhu Radhakrishna

Professor and Dean, School of Natural Sciences and Engineering, NIAS
Science and Society: Boon or Bane for Wildlife Conservation
December 14, 2016

Prof R Srikanth

Professor and Head, Energy and Environment Policy Program, NIAS
An Integrated Approach to Energy and Environment Policy for India
December 7, 2016

Ms Pallavi Thakur

Research Assistant, NIAS
Conjectural Digital Visualization of Vijayanagara era Bazaar Street
November 30, 2016

Prof D Suba Chandran

Professor, NIAS
India, Pakistan and Kashmir: Where Do We Go From Here?
November 23, 2016

Dr Leya Mathew

Post-Doctoral Associate, NIAS
Re-Forming Thinking Skills as Communication Skills: College-Prep Secondary Schooling and English in Globalizing India
November 16, 2016

Dr Prakash Panneerselvam

Post-Doctoral Associate, NIAS
Japanese Realpolitik: Nuclear Politics in South Asia
November 9, 2016

Dr Jeebanlata Salam

Assistant Professor, NIAS
Sociology of Right to Education: A Dynamic View through Northeast India
November 2, 2016

Dr Sumedha Bajar

Post Doctoral Fellow, NIAS
The 'where' of Skill Development
October 26, 2016

Prof R Srikanth

Head, Energy and Environment Policy Programme, NIAS
Risk Assessment and Management – An Approach
October 19, 2016

Dr Shoibal Chakravarty

Assistant Professor, NIAS
Integration of Renewables in the Indian Grid
October 5, 2016

Associates' Programme

Coordinator: Prof S Settar

Prof Matthew Bunn

Harvard University
*Evolving Opportunities for Cooperation
in Nuclear Security*
October 6, 2016



Mr Naresh Keerthi, Doctoral Scholar with the NIAS PhD Programme won the 'Young Historian of Science 2016' Award in December 2016 from Indian National Science Academy, New Delhi. The citation says that the award is in recognition of ... "For the excellent studies he has done in trying to remove some of the misconceptions in interpreting the technical terms employed in Sanskrit literature, and also shedding light on the traditional lexical corpora".

Literary, Arts and Heritage Forum

Coordinators: Prof Sharada Srinivasan
and Prof Sangeetha Menon

Dr Vijay Seshadri

Pulitzer Prize Winner, Professor, Sarah
Lawrence College, NY and Poet-in
Residence, NIAS
Our Time of Transitions
November 30, 2016



Prof R Srikanth, Head, Energy and Environment Policy Programme, NIAS received an invitation on November 19, 2016 by the Ministry of Coal, Government of India to serve as an Expert Member of a Task Force to develop an "Integrated Approach to Mining and Environment for Opencast Coal Mines". He also received an invitation on December 22, 2016 by the NITI Aayog to serve as an Expert Member of a Committee to finalise the Vision Document for the Ministry of Earth Sciences (MOES) and the Ministry of Mines, Government of India.



Dr Abha Rao joined NIAS as Assistant Professor under the NIAS-UNDP Policy Research Initiative on Inequality and Human Development Programme in the School of Social Sciences at the Institute on October 17, 2016.



Dr Arun Vishwanathan, Assistant Professor, International Strategic and Security Studies Programme, left NIAS on December 16, 2016 after serving five years at the Institute.

With generous support from "TCS Foundation" the construction of a new building named **TCS-Knowledge Centre** commenced at NIAS campus on November 28, 2016. This building will be an inspiration to the faculty and students by its providing the needed logistics and infrastructure support.



Mr V Srinivasa, NIAS Office Assistant played the role of Lord Krishna in a pauranik (mythological) Kannada drama titled "Daana Shoora Veera Karna" (Karna – the Heroic Great Donor) organised by the Employees and Students Association of the Indian Institute of Science, Bengaluru, as part of 61st Kannada Rajyotsava Celebrations. The event was organised under the auspices of the Tata Memorial Centre and the Committee for celebration of all eventful days in Indian Institute of Science, Bengaluru on December 26, 2016 at the JN Tata Auditorium.



Recent Publications

Indian Advances in Fast Breeder Nuclear Reactor Engineering by B Raj, P Chellapandi, pp 39-49, 30 November 2016, 2017. In: Energy Engineering: Proceedings of CAETS 2015 Convocation on Pathways to Sustainability. Eds: KV Raghavan and Purnendu Ghosh, Springer, Singapore

A facile and efficient single step ball milling process for synthesis of partially amorphous Mg-Zn-Ca alloy powders for dye degradation
M Ramya, M Karthika, R Selvakumar, Baldev Raj, KR Ravi
Journal of Alloys and Compounds Vol. 696, 5 March 2017, Pages 185–192

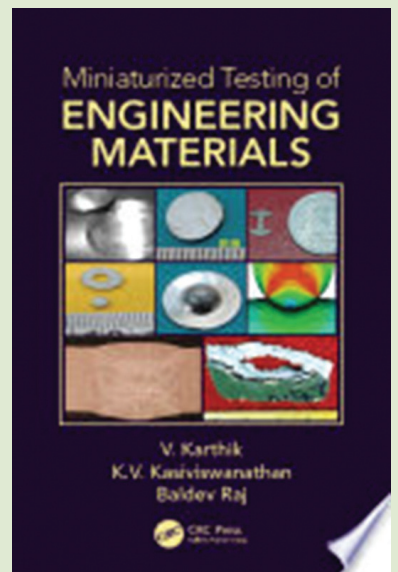
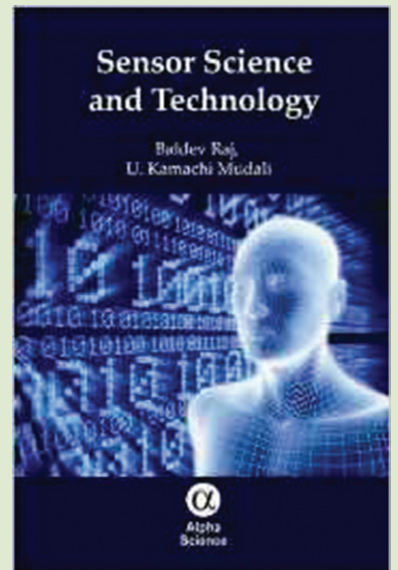
Human-wildlife Conflict, Pawan Kumar Agrawal, Baldev Raj, Sindhu Radhakrishna, Abraham Verghese, Kesavan Subaharan and Ankita Gupta, Current Science, Vol. 111, No. 10, 25 November 2016, pp. 1581-1582

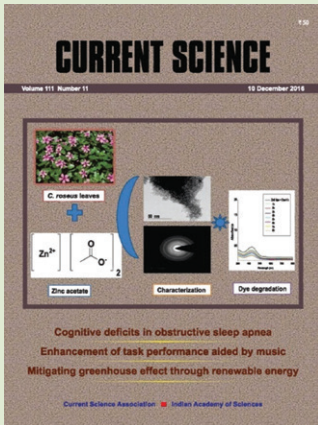
Path length tunable light-matter interaction in magnetic nanofluid based field-induced photonic crystal-glass structure by Junaid M Laska, Baldev Raj and John Philip
New J. Phys. 18 (2016) 103037, doi:10.1088/1367-2630/18/10/103037

Characterizing biofilms for biofouling and microbial corrosion control in cooling water systems
RP George, RP George, U Kamachi Mudali, U Kamachi Mudali, Baldev Raj
J. of Anti-Corrosion Methods and Materials 63 (6), 477-489, 2-16, 2016

Post in-situ reaction ultrasonic treatment for generation of Al-4.4 Cu/TiB₂ nanocomposite: A route to enhance the strength of metal matrix nanocomposites
J Nampoothiri, RS Harini, SK Nayak, B Raj, KR Ravi
Journal of Alloys and Compounds 683, 370-378, 2016

Miniaturised Testing of Engineering Materials
V Karthik, KV Kasiviswanathan and Baldev Raj
CRC-Press, Taylor & Francis Group, 2017





Sundar Sarukkai, "The sociality of science", *Current Science*, Volume 11, Issue 11, pp.1731-1732, December 2016

Karthi Balasubramanian and Nithin Nagaraj, "Aging and cardiovascular complexity: effect of the length of RR tachograms", *PeerJ*, Volume 4, Issue e275, December 2016

Gagan Deep Kaur, "Cognitive bearing of techno-advances in Kashmiri carpet designing", *AI & Society*, pp. 1-16, November 2016

D Suba Chandran, "LoC, J&K and New Delhi: New Pak COAS & Likely Challenges for India", *NIAS Strategic Forecast*, December 2016



Anitha Kurup, "Impact of Science and Technology on Women", *Yojana*, Issue December 2016, pp.68-71

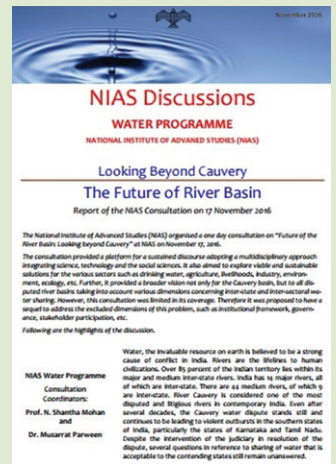


Thotreithem Hongray and Janaki Balakrishnan, "Dynamics of bow-tie shaped bursting: Forced pendulum with dynamic feedback" *Chaos: An interdisciplinary Journal of Nonlinear Science*, Volume 26, Issue 123107, December 2016

"Looking Beyond Cauvery: The Future of River Basin" *NIAS Report*, December 2016

Hippu Salk Kristle Nathan and Baldev Raj, "Can energy equality improve India's human development index?" *The Indian Economist*, 11 December 2016

Anshuman Behera, "Insurgency, Drugs and Small Arms in Myanmar," *Strategic Analysis*, Vol. 41, No. 1, pp. 34-48



Popular Articles

Coal can choke your breath or light your house. What will India choose?
R Srikanth and Baldev Raj, *The Indian Economist*, November 10, 2016

Industrial smoke levels are rising rapidly. Does India have a combat plan?
R Srikanth and Baldev Raj, *The Indian Economist*, November 11, 2016

Can energy equality improve India's human development index?
Hippu Salk Kristle Nathan and Baldev Raj
The Indian Economist, December 11, 2016
<http://theindianeconomist.com/energy-equality-equitable-society/>



Book Release: *Reengineering India: Work, Capital and Class in an Offshore Economy* by Carol Upadhyay, December 2, 2016

Whirls of Words: The Writer's Space

Nouveaux Commencements

Voici la chance de tourner une nouvelle feuille.
Voici le moment de rêver un rêve.
C'est le moment d'écouter la vérité la plus profonde
cachée dans votre cœur.

Cette année, vous devez aller à la forêt pour allumer un
feu,
Vous devez écouter attentivement le vent chuchotant.
Vous devez parcourir les eaux et naviguer doucement.
Vous devez embrasser la terre après avoir réalisé un grand
exploit.
Et enfin, c'est l'année où vous devez voler haut, toucher le
ciel et attraper les étoiles.
Parce que vous êtes une étoile!

Bonne année!

Translation from French to English

New Beginnings

Here is the chance to turn a new leaf.
Here comes the time to dream a dream.
Now is the time to listen to the deepest truth hidden in
your heart.

This year, you must go to the forest to light a fire,
You must listen intently to the whispering wind.
You must wade through the waters and sail smoothly.
You must kiss the earth after achieving a great feat.
And finally, this is the year in which you must fly high,
touch the sky and clutch hold of the stars.
Because you are a star!

Happy New Year!



Samhita K
Research Associate, NIAS

The New Beginning

मैं 'नवीनता' तेरे दरवाज़े पे हर रोज़ दस्तक देती हूँ।
तू दूर का चश्मा लगाके तलाशता मुझे,
मैं मुस्कुरा के तेरे पास ही खड़ी रहती हूँ।

ज़िन्दगी की आपाधापी में, कोसता तू वक्त को,
भला वक्त का क्या दोष, वो सदरियों से वैसे ही चला।
खुद ही बांधता बेड़िया तू खुद को,
नीरसता के सरोवर में, तू खुद ही फ़सा।

अनंत अटूट है बदलाव की गरमा,
मैं 'नवीनता' उसकी परछाई हूँ।
फूलों में खुशबू की तरह, उसके साथ ही समाई हूँ।

तू देख तो मुझे, वो पहली धूप की भीनी ताप में मैं हूँ,
उबलते पानी की भाप में मैं हूँ,
हमिनद से पघिलती श्वेत बर्फ़ की धार में मैं हूँ,
घुमड़ते बादलों में, वर्षा की बूंदों के बाण में मैं हूँ,
हर नयी पौध, नयी पत्ती, खलिते फूलों की आड़ में मैं हूँ।

ज़िन्दगी मेरा पर्याय है,
मैं मौत से पेच लड़ाती हूँ।

मैं 'नवीनता' तेरे दरवाज़े पे हर रोज़ दस्तक देती हूँ।
तू दूर का चश्मा लगाके तलाशता मुझे,
मैं मुस्कुरा के तेरे पास ही खड़ी रहती तू।

Few Words

This poetry is about fresh beginning or new opportunities
waiting for us outside. But we are busy whining about the
drill of boredom/ failures we are into. New opportunities
might not knock doors every time but they are there,
everywhere. We just need to look for
them.



Ekta Gupta
Doctoral Scholar, NIAS

The Real Treasure

ಕಸವರಮೆಂಬುದು ನೆರೆ ಸೈರಿಸಲಾರ್ಪೋದೆ ಪರವಿಚಾರಮಂ ಧರ್ಮಮಂ |
ಕಸವಂ ಕಸವರಮನುಬ್ಬಸಮಂ ಬಸಮಲ್ಲ ದಿರ್ದು ಮಾಡುವದೆಲ್ಲಂ || ೩. ೧೭೭||

kasavaram'embudu nere sairisalār'poḍe paravicāramam
dharmamam |
kasavem kasavaram'en'ubbasamam basamalladirdu
māḍuvadellam || 3.177 ||

The ability to endure another's views, or a different sense
of justice;
is real treasure.
Garbage and gold both will pall,
for those who have no restraint, no tolerance.

This verse is from the oldest Kannada text available in full
– Śrīvijaya's Kavirājamārga [The ways of Royal poetry].
Composed in the 9th century CE, this elaborate treatise of
poetics redacts much material from Daṇḍi's Kāvyaḍarśa
and the early Tamil poetological texts; but also expresses
many novel views of Śrīvijaya, who was a court poet of
the Rāṣṭrakūṭa ruler Nṛpatuṅga.

Besides being a timely reminder of the need to resist
illiberal tendencies; this stanza is interesting for its
unusual deployment of the gold-and-garbage trope.
Normally, this expression is used in the context of the
bairagi (renunciate), who regards an ingot of gold and
a clod of earth equally. Here, this common idiom is
subverted, to mock at the intemperate – wealth or waste
will only give them grief.



Naresh Keerthi
Doctoral Scholar, NIAS

The Lotus

एषा वभिावरी सतिकरिणकलारजतसूचघिटतिन। सीव्यति
सरसरुहिस्य ज्योत्स्नासूत्रेण पत्राणि

Eṣā vibhāvarī sita-kiraṇa-kalā-rajata-sūci-ghaṭitena |
Sivyati sarasiruhasya jyotsnā-sūtreṇa patrāṇi

Meaning

This night sews up the petals of the lotus with the thread
of moonlight tied to the silver needle formed by the
slither of moon.

Few Words

The verse is based on the poetic convention that lotuses
close when the moon rises. Instead of saying so directly,
I compare the crescent moon to a silver needle and fancy
the night as a lady who sews up lotus petals with this
needle, to the tip of which is tied the
thread of moonlight.



Shankar Rajaraman
Doctoral Scholar, NIAS

Birds and Blooms

MB Rajani Presents



The African Tulip Tree (*Spathodea Campanulata*) is known throughout the world as one of the most beautiful of all flowering trees. This spectacular flowering tree flourishes mainly in the tropics (it is sensitive to cold), and in many Pacific regions. The tree is a member of the bignonia or trumpet vine plant family (Bignoniaceae).

It is a large evergreen tree, growing to over fifty feet tall, with flowers throughout the year. In cooler climates, it is usually smaller. A native of tropical Africa, the African Tulip (Neeru Kayi mara in Kannada/Patadi in Tamil/ Rugtoora in Hindi) is supposed to have been introduced into India in the late 1900s as an ornamental plant. Resplendent in full bloom with its orange-red flowers with crinkly yellow borders, the tree is a common sight in Bangalore. At NIAS we have several of this tree, and two good specimen are along the drive near the hostel and green house.

The pinnate leaves grow up to 40 cm (16 in) long -- they are bronze when young and turn deep glossy-green at maturity. The blossoms of the African tulip tree are not only pretty but entertaining, as children who grew in tropics have discovered. Every flower bud is pressurized with a watery nectar as it expands; if you squeeze the buds just right, they make an effective water pistol that can be accurate up to ten feet away.

The diluted nectar makes an ideal thirst quencher for wildlife. The tree

supports barbets that make their nests in the soft wood of this tree, Bonnet Macaques munch on the succulent buds, bats come to roost, Weaver Ants build their nests, spiders trawl the foliage looking for prey, squirrels snack on the fruit pods, and parakeets are frequent visitors. The tree can be deadly for bees, butterflies and other insects, which are frequently found lifeless in the nectar within its flowers. The walls of the flower are a little sticky, and this prevents insects from climbing out.

In some parts of Africa people believe that the tree has magical properties, so wands used by medicine men are made from its twigs, while a string of the tree's red flowers posted at one's door marks the home-owner as a source of evil. In its native range, the bark, leaves and flowers of the tree are used as medicine. Its wood is used to make drums and blacksmith's bellows, while its seeds are boiled by African hunters to extract poison. The tree is also used as a fire resistant as it doesn't burn easily. In spite of its usefulness for medicinal purposes, the tree is also listed amongst the top invasive species in the global invasive species database. The Cook Islands, Fiji, Hawaii, Guam and Samoa are all inundated with this tree.

Botanical Name:

Spathodea Campanulata

Family: Bignoniaceae

Origin: West Africa

Common Name: African Tulip Tree, Fountain Tree, Nandi Flame, Nile Flame, Squirt Tree, Tulip Tree, Uganda Flame.



Photo Courtesy: MB Rajani

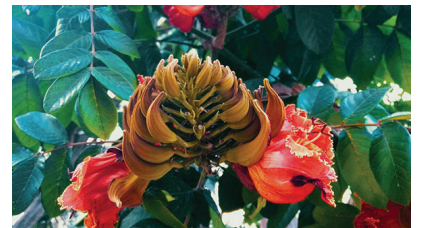
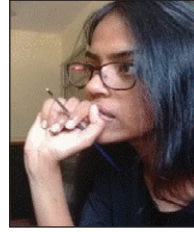


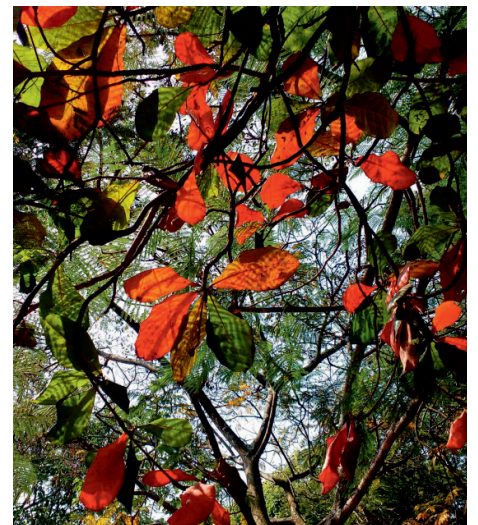
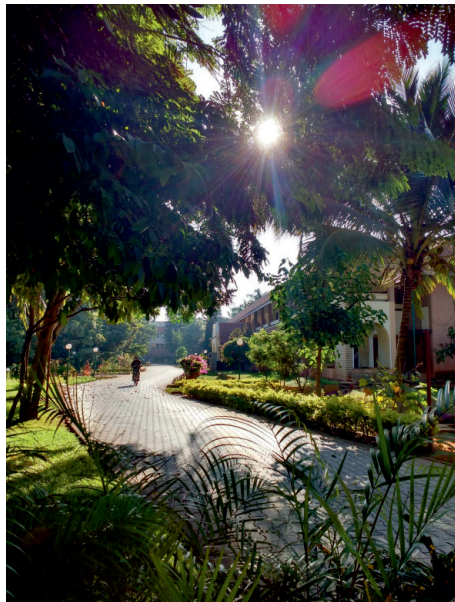
Photo Courtesy: Sonia Das

Through The Lens

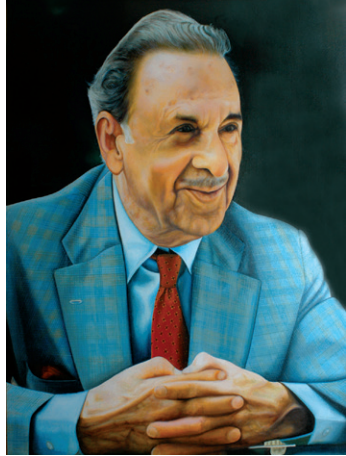
Ekta Gupta Continues to Capture Nature's Beauties @ NIAS



Ekta Gupta
Doctoral Scholar, NIAS

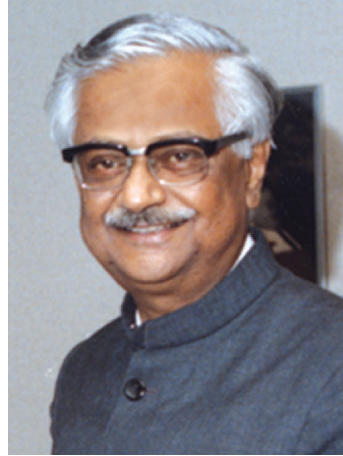


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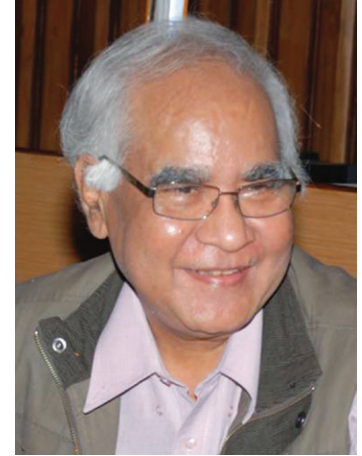
Founder Chairman
JRD TATA

The National Institute of Advanced Studies (NIAS) was conceived and established by the vision and initiative of the late Mr JRD Tata. Dr Raja Ramanna, as the Founder Director, immensely



Founder Director
RAJA RAMANNA

contributed to the growth and development of the Institute. In subsequent years, Prof Roddam Narasimha, Dr K Kasturirangan and Prof VS Ramamurthy became the Directors of NIAS.



Current Director
BALDEV RAJ

Presently Prof Baldev Raj is the Director.

NIAS celebrates its Foundation Day on June 20.

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