

Annual Report

2009 - 2010

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India Semiconductor Association

Head office: UNI Building, Millers Tank Bund Road
Bangalore - 560 052 India
Phone: +91 80 4147 3250 Facsimile: +91 80 4122 1866

New Delhi office: DBS Business Centre, First Floor
World Trade Tower, Barakhamba Lane, Connaught Place
New Delhi - 110 001 India

Email: research@isaonline.org

Website: www.isaonline.org

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Annual Report

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Chairman's Message



The year 2009-10 was a year with several milestones for ISA, and indeed for the industry in India. We have increased our scope to include the emerging Indian Electronic Systems Design and Manufacturing (ESDM) industry within our ambit. Our efforts to make the electronics industry, driven by semiconductors, a national agenda are showing results. We have identified the domestic market as one of our key focus areas. Our special emphasis is on product innovation and the development of products made by India and for India markets.

On a personal note, it was an enriching and satisfying year for me as Chairman of ISA. My association with the semiconductor industry began in 1992. I supported the Indian IT industry as part of Software Technology Parks of India (STPI). I was also among those within the government who supported the formation of ISA at its formative stage. It has been my privilege to have led ISA last year.

For the past five years, ISA has successfully promoted the semiconductor industry and created a unique identity for the sector. Within a short span, ISA has been able to create awareness about the industry and generate interest in it across various stakeholders. Now with the extended scope, we are focusing our efforts to build global awareness for the Indian ESDM industry.

ISA has channelized its efforts in three directions. First, through a series of events focused on creating leadership among Indian companies and opening the door for business opportunities for member companies. Second, by providing credible and up-to-date data on the industry with research initiatives. Third, by engaging with the government at both the central and state levels for strategic, policy-making initiatives.

Our efforts have shown results. We have created value for our members through high-powered events at regular intervals. Vision Summit 2010 had an excellent quality of discussions, which provided valuable inputs for business decisions. The participation of global thought leaders, leaders from the Indian industry and policy-makers made the Summit the right venue for sharing ideas and networking. AutoExCITE 2010, which was organized during Auto Expo in New Delhi, provided a great opportunity for industry players to showcase their capabilities in the evolving automotive segment. The second edition of Solar PV Conclave in Solarcon last year brought under one roof all the key players—business leaders, technology experts and strategists. ISA has been supporting BangaloreIT.biz. Last year we conducted the Embedded Electronics Event (E3) that had a special focus on embedded electronics.

In research, we have been providing crucial data on the semiconductor market through the ISA-F&S Report updates. These reports have provided a base for business leaders, investors, analysts, the government and the media on the industry. The other significant report last year was the release of the *ISA report: The Smart Card Industry: A Semiconductor Perspective*. The timing of the report was important as it coincided with the government's initiative to create Unique Identification (UID) for the entire country.

On our government interface, we have developed strong working relationships at the highest levels with several government bodies. We are today a knowledge partner on the industry for the government. Government interactions increased significantly during the period November 2009 to March 2010 when the Jawaharlal Nehru National Solar Mission was announced and the issues of concern to the domestic solar PV industry had to be addressed. At the state level, ISA has been advising various state governments and acting as a think-tank for developing this industry. Over the past year, ISA has actively participated in committees set up by the government. I say with immense pride that ISA has been partly responsible for bringing the sector to the present stature within the country. I had the privilege to lead the subcommittee of the task force set up by the Department of IT, Govt of India. We have submitted a report with recommendations to the Government of India to nurture the ESDM industry to the level of US\$ 400 billion by 2020.

In the coming years, ISA will stride ahead on its commitment to build global awareness for the Indian ESDM industry. I'm of the firm belief that the organization, under the leadership of the newly constituted Executive Council and ISA President Poornima Shenoy, the active participation of industry leaders, and the dedication of the executive team, will fulfill the expectations of the emerging Indian ESDM industry. I personally believe this decade will be the 'Decade of ESDM'.

With regards,

BV Naidu

President's Message



ISA completed five years in 2009-10, and what a year it has been! We have made a strategic move to extend our charter beyond the semiconductor industry to include systems. ISA today focuses on the Indian Electronic System Design and Manufacturing (ESDM) industry that consists of VLSI design, embedded software, reference board design, high-tech manufacturing, electronic systems design, and the ecosystem. It can be taken forward on the strong foundation that has been laid.

We firmly believe that the ESDM industry will create huge opportunities in the country. Innovative technologies will build platforms for change, thereby promoting inclusive growth in the country.

ISA has been underlining the need for Indian companies to innovate to stay relevant in today's marketplace. We need to build a culture of continued innovation, where companies are recognized and honored for their differentiated products or services. This will have a spiraling effect on the entire industry.

To reinforce this message, from the year 2010 onwards, ISA has shifted the focus of Technovation Awards to electronic product companies and start-ups. The response from industry has been highly encouraging. We hope the awards will act as an inspiration to move further on the path for innovation.

This year we have stepped up our efforts in the key focus areas of events, research and government interface. High quality speakers, a wide mix of participants and networking opportunities marked Vision Summit 2010, Solarcon, and ExCITE. Our research reports focused on providing data on emerging opportunities in the industry. We have strengthened our engagements with the central and state governments.

2009-10 was a difficult year for the industry globally. I appreciate the support that members extended to ISA during this period.

The ISA Executive Council (EC) has provided the organization leadership and direction to take the industry to the next level. I would like to thank outgoing ISA Chairman B.V. Naidu and members of the EC. We look forward to similar support from the incoming EC as we work towards building a strong ESDM ecosystem in the country.

The ISA secretariat has worked tirelessly to translate the vision for the industry into a concrete plan of action. I thank the team for the sincerity and dedication that they display at work.

We are excited about the possibilities that the future holds for the Indian ESDM industry. It is a privilege to be part of a journey that promises to change India.

With best wishes,

Poornima Shenoy

Executive Council 2009-2010



B.V. Naidu
Chairman
Genexx Empower Corp Pvt. Ltd.

Chairman



Dr. Biswadip (Bobby) Mitra
President & Managing Director
Texas Instruments (I) Pvt. Ltd.

Vice Chairman



Poornima Shenoy
India Semiconductor
Association (ISA)

President



Dr. Pradip K. Dutta
Corporate Vice President &
Managing Director
Synopsys (I) Pvt. Ltd.

Treasurer



Jaswinder Ahuja
Corporate Vice President &
Managing Director
Cadence Design Systems India

Adviser



Anil Gupta
Managing Director
ARM Embedded Technologies Pvt. Ltd.



Vivek Sharma
Vice President, Asiapac-India Operation
Director, India Design Centres
STMicroelectronics Pvt. Ltd.



Ganesh Guruswamy
Vice President & Country Manager
Freescale Semiconductor (I) Pvt. Ltd.

Council Members



S Janakiraman
President & CEO
Product Engineering Services
MindTree Ltd.



Dr. Rajewwa (Rajiv) Arya
Chief Executive Officer
Moser Baer (I) Ltd.



Rajiv Kapur
Managing Director
Broadcom (I) Pvt. Ltd.



Prof. S. Sadagopan
Founder-Director
IIIT, Bangalore

Executive Council 2010



Dr. Biswadip (Bobby) Mitra
President & Managing Director
Texas Instruments (I) Pvt. Ltd.

Chairman



Dr. Pradip K. Dutta
Corporate Vice President &
Managing Director
Synopsys (I) Pvt. Ltd.

Vice Chairman



Poornima Shenoy
India Semiconductor
Association (ISA)

President



Rajesh Ram Mishra
Vice President -
Product Engineering Solution
Wipro Technologies Ltd.

Treasurer



B.V. Naidu
Chairman
Sagitaur Ventures (I) Pvt. Ltd.

Adviser

Council Members



Dr. Satya Gupta
Co-Founder & CEO
Concept2Silicon Systems Pvt. Ltd.



Ganesh Guruswamy
Vice President & Country Manager
Freescale Semiconductor (I) Pvt. Ltd.



Raghu Panicker
Sales Director
Mentor Graphics India



Dr. Praveen Vishakantaiah
President
Intel India



Vivek Sharma
Regional Vice President GC & SA-India Operations
Director, India Design Centers
STMicroelectronics Pvt. Ltd.



Sanjay Nayak
CEO & Managing Director
Tejas Networks

About India Semiconductor Association (ISA)

ISA is the premier trade body representing the Indian Electronic System Design and Manufacturing (ESDM) industry and has represented it since 2005. It has around 140 members –both domestic and multinational enterprises. ISA is committed towards building global awareness for the Indian ESDM industry and supporting its growth through focused initiatives in developing the ecosystem. This is through publishing credible data, networking events and alliances with other international associations.

ISA works closely with the government as a knowledge partner on the sector, both at the federal (center) and state levels. ISA has played a prominent role in supporting the Government of India in the formation of the Semiconductor Policy 2007. It has worked with the Government of Karnataka in the formation of the State Semiconductor Policy 2010.

For more information, please visit www.isaonline.org

The primary objective of ISA is to act as a catalyst for the growth of the ESDM industry in India. Objectives include:

- Create global awareness for the Indian semiconductor and electronic systems industry outside of the generic 'IT' umbrella
- Create a win-win interaction among semiconductor and electronics product and services companies, government, academia, venture capitalists and industry bodies
- Create an enabling ecosystem that catalyzes industry growth and leadership
- Enhance operational efficiency
- Foster active collaboration between industry and universities to further expand the available world-class semiconductor talent pool
- Identify investment opportunities
- Drive technology vision for the semiconductor and electronic systems industry
- Promote trade and industry

Overview

ISA has in the past one year expanded its scope of activities to showcase the capabilities of the emerging Indian ESDM industry and the opportunities that exist in the domestic market. We continued our focus on the need for industry to ride the domestic demand wave through product innovation, customized to local needs.

ISA Core Initiative Groups (CIGs) drove vertical-based and segment-based programs. These initiatives were aimed at helping member organizations across market verticals sharpen their business focus by keeping them updated on the emerging market trends and developments.

ISA has three main pillars of activities: events, industry research, and government interface.

Events

ISA has kept up its focus on enhancing member engagement through high quality events. Events have provided members opportunities for knowledge sharing and networking. Global and Indian industry leaders, and representatives from the government took part in ISA events.

ISAVISION SUMMIT

feb 1 & 2 2010
Hotel Taj West End • Bangalore

The fifth edition of Vision Summit took place on February 1-2, 2010 in Bangalore. The annual, global conference on the electronics industry by ISA was centered on **India Market – Momentum for Growth in the New Decade**.

Global attention is now on India as it embarks on a journey of double-digit economic growth. A buoyant industry, a supportive government, and an overall enabling atmosphere for investment are helping the country script a positive story. The Indian ESDM industry is expected to be a significant contributor to this growth momentum. Vision Summit 2010 provided the forum for global industry leaders and influencers to provide insight into the way the industry is moving forward. Around 200 delegates attended Vision Summit 2010.

Former Chairman, Indian Space Research Organisation (ISRO), Madhavan Nair, under whom India launched its moon mission Chandrayaan in 2009, inaugurated the Summit. Mr. Nair stressed on the need for innovation in the highly competitive global market for electronics. During the inaugural session, Chairman, ISA, B.V. Naidu presented the findings of the sub-committee of the taskforce set up by the central IT department to promote the ESDM industry. The report called for the setting up of a national electronics mission that would be a nodal agency for the ESDM industry and act as an interface between the industry and the government. It also recommended the setting up of clusters of excellence in various regions of the country, encouraging 'made for India' goods, creating an R&D fund, rationalizing the tax structure, and promoting skill development.

ISA also released a report on the smart card industry with a semiconductor perspective. The smart card industry is going to receive a boost with the launch of the massive Government of India initiative on Unique Identification (UID) for Indian citizens.

The two-day conclave saw active participation and support of the government. The Karnataka Semicon Policy was unveiled at a high-powered function with Chief Minister, Government of Karnataka, B.S. Yeddyurappa, as the Chief Guest. Ashok Kumar C. Manoli, IAS, Principal Secretary, IT & BT, Government of Karnataka was the Guest of Honor at the Technovation Awards 2010 presentation



Inaugural session at ISA Vision Summit 2010

ceremony. ISA hosted a special session for the Government of West Bengal where senior government officials spoke about the investment opportunities in West Bengal.

British Deputy High Commissioner, Richard Hyde, was the Guest of Honor at a networking dinner. The UK Trade and Investment (UKTI) also hosted the UK Country Forum. Electronics companies and market experts from UK and India met to explore business opportunities, joint solution development, creation of an innovation ecosystem and discuss cutting-edge UK technology that can be introduced in the Indian market.

The Israel Consulate hosted a networking breakfast which was presided over by Elad Goz, Consul, Economic Affairs, Consulate General of Israel.

Global business and technology leaders spoke during the two-day conclave. The sessions threw light on the opportunities and challenges that lie ahead for India in the field of electronics design and manufacturing. For the first time during Vision Summit, the Technovation Award nominees made a presentation.

SOLARCON[®] India2009

November 9 -11 2009 • HICC • Hyderabad, India



Solarcon 2009 inauguration with Shri K. Rosaiah, Chief Minister, Andhra Pradesh

ISA, along with SEMI, organized the second Solar PV Conclave, Solarcon, on November 9-11, 2009 in Hyderabad. The conference, which was a huge success, provided a common platform for global and domestic experts in the solar PV sector to share their insights on crucial issues. Representatives of the central and state ministries, departments, public sector undertakings, along with power developers, distributors and regulatory agencies were part of the three-day conclave.



Launch of Solarcon 2009 with Dr. Farooq Abdullah, Honorable Minister, Ministry of New and Renewable Energy, Government of India

Solarcon provided a forum to deliberate on India's positioning in the solar PV manufacturing industry, market opportunities, challenges in realizing early grid parity, the roadmap for manufacturing technologies and government policies. The conference has helped create significant interest in the evolving solar PV sector in the country.

Andhra Pradesh Chief Minister K. Rosaiah inaugurated the conference. The Ministry of New & Renewable Energy (MNRE), Indian Renewable Energy Development Agency (IREDA), Andhra Pradesh Industrial Infrastructure Corporation (APIIC) & AP Invest jointly supported this premier event for the solar PV sector.

ISA excite 2010

Exhibition of Complete Integrated
Technology Ecosystem

January 5 to 11, 2010 • Pragati Maidan, New Delhi

ISA ExCITE is an exhibition-cum-conference for the semiconductor industry and associated companies in India. This was the second edition of ISA ExCITE and it focused on automotive electronics. The event was a part of the Auto Expo held during January 5-12, 2010 in New Delhi and drew considerable attention from players in the automotive electronics industry. Around 100 executives from within the country and outside participated in the conference. Delegates exchanged ideas and provided insights on 'Smart and green automobiles', the theme for ExCITE 2010. The discussions provided valuable inputs for business decisions.



ISA panel discussion at ISA Auto ExCITE 2010

B.V. Naidu, Chairman, ISA and Chairman, Sagitaur Ventures, gave the inaugural address and Ganesh Guruswamy, ISA EC member & Vice President & Country Manager, Freescale Semiconductor India, delivered the theme address. The conference had four panel discussions on January 7. *Details are on the next page:*

Electronics for Energy Efficient Power-train

The panel discussed how environmental concerns and driver comforts are pushing for next generation automotive power-train electronics. Most countries are championing cleaner and greener automobiles. Today's high-end Electronic Control Units (ECUs) are combining these demands to create efficient engine management systems that would change tomorrow's driving experience.

Moderator:

Praveen Acharya
Vice President
Semiconductor Solutions Group
KPIT Cummins Infosystems Ltd.

Panelists:

Dr. A. Zahir
Vice President
Bosch Ltd.

Suraj Mukundrajan
Director Automotive Development
Infineon Technologies (I) Pvt. Ltd.

Sandip Sarkar
Head - Electrical Systems
Controls & Software Engineering
General Motors - Technical Center India

Next Generation Auto Infotainment

Automotive clusters/entertainment and driver information systems have seen revolutionary changes in the past decade. The next generation infotainment/telematics systems will provide entertainment (audio and video), GPS navigation, driver information by voice activated and rear view by digital camera for reverse parking. Auto infotainment and telematics are going to play a big role in the next-generation car.

Moderator & speaker:

Douglas J Brandt
Managing Director
Delphi Electronics & Safety
Asia Pacific Infotainment & Driver Interface (IDI) Product Lines

Arvin Baalu
Senior Manager
Corporate Technology Group
Harman India Development Center

Renukaprasad Sharma
General Manager & Head of Automotive Electronics
Product Engineering Services
Wipro Technologies Ltd.

Vivek Tyagi
Country Sales Manager, India
Freescale Semiconductor (I) Pvt. Ltd.



ISA member booth at ISA Auto ExCITE 2010

Automotive Safety & Body Electronics

Safety in passenger vehicles has been a focal area for the global automotive industry. This is more so in developing countries where vehicular speed is unregulated, traffic is exploding and roads/infrastructure for safe driving is inadequate. Another challenge is maintaining basic safety standards while keeping costs low. With an increase in the role of body electronics in automotive vehicles, panelists discussed issues like sustainability and relevance of current programs, and the direction in which ecosystem partners are headed.

Moderator

Joerg Becker

Director, Business Development (BRIC)
Automotive Safety & Comfort
NXP Semiconductors
Germany GmbH

Speakers

Anuj Kapuria

Director
Hi-Tech Robotic Systemz

Joachim Nell

Head of TechCenter India &
Director Affordable Cars Strategy
Continental AG

Vishwas Vaidya

Assistant General Manager (Electronics)
Tata Motors

Smart Roads

'Smart infrastructure' is infrastructure powered with the latest sensors, wireless communications and computing power, all held together by the Internet, to provide real-time information to motorists on the traffic or on the state of a road or a bridge to the authorities. Then the highway could alert motorists of an impending traffic jam or a bridge could send alerts to the authorities that it is about to collapse. The other emerging concept is Vehicle Infrastructure Integration (VII), which is a system that lets roads, traffic signals and vehicles talk to each other, and share information through a range of technologies. Panelists discussed the possibilities and the challenges ahead.

Moderator & speaker

Dinesh Mohan PhD

Volvo Chair Professor and Coordinator
Transport Research and Injury Prevention Programme
WHO Collaborating Centre
Indian Institute of Technology, Delhi

Praveen Sood IPS

Additional Commissioner-Traffic
Bangalore City Traffic Police

S. Mubashir

Director/Scientist `F`
TIFAC/DST Department of Science & Technology
Government of India

Ashok Chandak

Senior Director- Global Sales & Marketing
NXP Semiconductors (I) Pvt. Ltd.

Thought Leadership Forum

Thought Leadership Forum (TLF) provides an opportunity for the top management in Indian companies to interact with global leaders. ISA invites thought leaders to share their experiences and throw light on current developments in the industry and the market. It is an exclusive opportunity for ISA members to update themselves on emerging trends and network with a global leader.

ISA invited Dr. Eli Harari, Chairman and CEO, SanDisk for a Thought Leadership Forum on March 10, 2010. Dr. Harari, a global expert in flash storage card systems, has held various technical and managerial positions and has over 100 patents issued in the field of non-volatile memories and storage systems. He discussed the growth and future prospects of flash memory during the TLF session with Indian leaders.



Dr. Eli Harari, Chairman and CEO, SanDisk with S. Janakiraman, President and Group CEO, Product Engineering Services, MindTree Ltd.

TECHNOVATION

AN ISA INITIATIVE

Celebrating Excellence in Electronics...

Awards 2009 & 2010

Technovation Awards 2009

Technovation Awards 2009, instituted to promote semiconductor and solar PV related research in the country, entered its third year in 2009. Individuals and R&D institutes received the awards for their innovative work in core technology areas. The Technovation Awards 2009 ceremony was held on November 11, 2009 during BangaloreIT.biz. Ashok Kumar C. Manoli, IAS, Principal Secretary, IT&BT and Science & Technology, Karnataka, presented the awards.

The award categories:

- **TechnoVisionary Award**
(for lifetime achievement in the field of semiconductors)
- **TechnoMentor Award**
(for academician/researcher for his/her outstanding contribution in the field of semiconductors)
- **TechnoShield Award**
(for a research entity, such as a laboratory or a department)
- **TechnoInventor Award**
(for an individual with innovative, cutting-edge and relevant research at masters/doctoral level)

Technovation Karnataka:

- **Best Faculty Member Award**
(for currently active faculty members in the VLSI, semiconductor, embedded software and other relevant areas)
- **Best PG Student Project Award**
(for PG students in the area of VLSI, semiconductor, embedded software and other relevant areas)

VLSI 2007 Conference Committee was the sponsor for these awards.

Winners of Technovation Awards 2009:

TechnoVisionary

Dr. Amalendu Bhattacharyya	Jaypee Institute of Information Technology University, Noida
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TechnoMentor

Prof. V. Ramgopal Rao	Indian Institute of Technology, Bombay
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TechnoShield

Department of Condensed Matter Physics and Materials Science Semiconductors Group	Tata Institute of Fundamental Research Lab
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TechnoInventor

PhD Category

Dr. Venkatnarayan Hariharan	Indian Institute of Technology, Bombay
Thesis Title: Compact Model Development for Nanoscale Finfets	Current Status: Design Modeling Engineer Maxim Integrated Products

MTech Category

Reddy Karthikeyan	Indian Institute of Technology, Madras
Thesis Title: Analysis of Clock Jitter in Continuous Time $\Delta\Sigma$ Modulators	Current Status: Design Engineer Texas Instruments (I) Pvt. Ltd.

Biswajit Ray	Indian Institute of Science, Bangalore
Thesis Title: Impact of Body Center Potential on the Electrostatics of Undoped Body Multi Gate Transistors: A Modeling Perspective	Current Status: Pursuing Ph.D. from West Latayette, USA

Kannan S.A.	Indian Institute of Science, Bangalore
Thesis Title: Low Power Design Techniques for the Front End of a Radio Frequency Communication Receiver	Current Status: Design Engineer Texas Instruments (I) Pvt. Ltd.

Technovation Karnataka

Best Faculty

Prof. C.R.Venugopal	S J College of Engineering, Mysore
Area of specialization: Parallel I/O architecture, VLSI architecture and embedded systems	



Ashok Kumar Manoli IAS, Principal Secretary, DIT, Govt of Karnataka presenting TechnoVisionary Award 2009 to Dr. Amalendu Bhattacharyya, Jaypee Institute of Information Technology University, Noida



The winners of Technovation Awards 2009 along with team ISA

Technovation Awards 2010

ISA presented 'Technovation Awards - Celebrating Excellence in Electronics' in its new format during Vision Summit 2010. The awards recognize role models and excellence in Electronic System Design and Manufacturing ESDM industry. It covers the whole electronics value chain. Technovation Awards acknowledge, recognize and honor India's most competitive companies in the semiconductor and electronics ecosystem. It focuses on organizations that are driving the industry forward. The awards provide a platform for companies in the ecosystem to showcase their growth and product successes.

The award categories:

- Best Electronic Product of the Year
 - Consumer
 - Energy
 - Healthcare
 - Security
 - Telecom
 - Other (e.g., agriculture, governance, etc.)
- Start-Up to Watch
- TechnoVisionary
- TechnoMentor

Winners of Technovation Awards 2010:

ISA UKTI TechnoVisionary

Dr. Kumar N. Sivarajan CTO & Co-founder	Tejas Networks Ltd.
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Start-up to Watch

ISA Start-up to Watch Winner	Saankhya Labs
ISA Start-up to Watch Honorable Mention	Cosmic Circuits

TechnoMentor

Winner - Industry	Dr. Sreeram Vasanthi Director - Technical and Marketing	Websol Energy System Ltd.
Winner - Academia	Dr. Shanthy Pavan Professor - Analogs / Mix Signal Design	IIT Madras

Best Electronic Product

Category	Winners	Product
Other - Nuclear	Bharat Electronics Ltd.	Pre Shower - 32 Channel Silicon Strip
Energy	Gautam Polymers	Solid Multilight (Solar LED Lantern)
Healthcare	Infotech Enterprises Limited	USB Power 3 lead ECG Monitor
Other - BFSI	Integra Micro Systems Pvt. Ltd.	iMFAST - Integra's Mobile Financial Application Secure
Energy	Kotak URJA Pvt. Ltd.	Solar powered "Egg lamp"
Security	Kritikal Solutions Pvt. Ltd.	Automatic License Plate Recogniser
Healthcare	Leowin Solutions Pvt. Ltd.	"Mozzquit" Mosquito Trap
Other - Agriculture	Mangalore Robotronics Technologies	Remote controlled system for power tillers
Consumer	Tachyon Technologies	Quillpad
Telecom	Tejas Networks Ltd.	Elan
Consumer	Verismo Networks Pvt. Ltd.	VuNow - Internet TV Platform



Innovation lounge for the Technovation Award 2010 winners



Rakesh Singh IAS, Additional Secretary, DIT, Govt of India presenting Best Electronic Product Award to Kotak URJA Pvt. Ltd.



Richard Hyde, British Deputy High Commissioner, Bangalore presenting ISA UKTI TechnoVisionary Award 2010 to Dr. Kumar N. Sivarajan, CTO & Co-founder, Tejas Networks Ltd.



Ashok Kumar Manoli IAS, Principal Secretary, DIT, Govt of Karnataka presenting Start Up to Watch 2010 Award to Saankhya Labs

Delegations

ESDM companies around the world are looking towards India for the quality of talent and the level of expertise the industry here brings to the table. Delegations from other countries have focused on collaborating with Indian companies to leverage their skills. ISA offers Indian companies business opportunities through delegations to other countries. The following are the delegations in the past one year:



ISA delegation to 24th EU PVSEC & the third Global Demand Conference, Hamburg, Germany

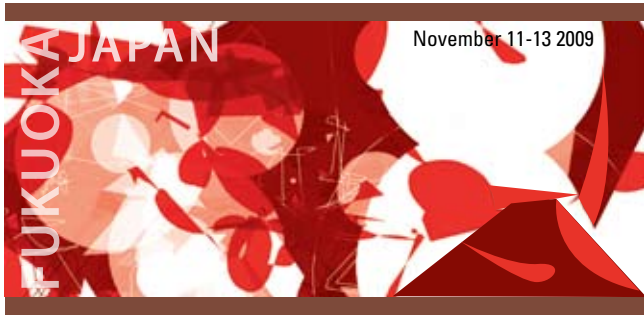
Germany, September 21-25, 2009: An ISA delegation to Hamburg, Germany participated in the 24th European Union Photovoltaic Solar Energy Conference (EU PVSEC) and the third Global Demand Conference.

The delegation comprised of representatives from Andhra Pradesh Industrial Infrastructure Corporation Ltd. (APIIC), AP Invest, Genexx Empower Corp. Pvt. Ltd., Indosolar Ltd., Lanco Solar Pvt. Ltd., Moser Baer Photovoltaic Ltd., Reliance Industries Ltd. – Solar Group, Solar Semiconductor Pvt. Ltd. and Texas Instruments (I) Pvt. Ltd.



ISA delegation to UK

UK, September 28-October 2, 2009: ISA organized a business delegation visit to UK. The visit focused on potential business opportunities between design companies in UK and India, and methods to create larger visibility of the semiconductor design sector in India. UK Trade & Investment (UKTI), the government body responsible for promoting the UK market, collaborated with ISA to organize this visit. The delegation consisted of representatives of small and medium size domestic design companies.



Japan, November 11-13, 2009: The business delegation to Fukuoka was in collaboration with Japan External Trade Organization (JETRO). The visit focused on promoting Indian embedded, automotive and design companies, and exploring business opportunities between the two countries. N. Krishnan, Director General, STPI, led the delegation that included business leaders and government representatives. The delegates attended the 2009 Microelectronics Assembling and Packaging (MAP) workshop. The MAP workshop's aim is to facilitate the creation of a value network by linking over 700 IC-affiliated companies through open discussions and sharing of state-of-art ideas, techniques and perspectives on microelectronics assembling and packaging among leading industrial companies and academia.



ISA delegation to MAP 2009 Fukuoka, Japan

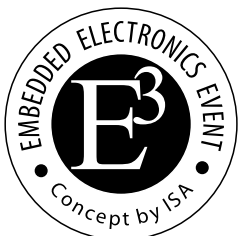
ISA received an inbound delegation from Japan in August 2009. The delegation explored business opportunities between Indian and Japanese semiconductor companies. Japan offers opportunities for small and medium sized businesses. KPIT Cummins Infosystems Ltd., Pune hosted a seminar on 'Semiconductor business opportunities between India and Japan'. Prof. Hajime Tomokage, President, the Japan Institute of Electronics Packaging, headed the delegation.

Memorandum of Understanding (MoU)

ISA signed an MoU with UK Trade & Investment (UKTI), the government body responsible for marketing the UK overseas, promoting British exports and attracting inward investment. The MoU, signed on August 31, 2009, is aimed at encouraging and developing global value chain partnerships between the Indian and UK semiconductor industries.



ISA signs MoU with UKTI at British Embassy, New Delhi



ISA has been supporting BangaloreIT.biz, the annual IT and telecom show organized by the Government of Karnataka. Last year ISA hosted ISA E3, the Embedded Electronics Event in November 2009. E3 included two panels on the conference theme, 'Embedded electronics: trends and opportunities in India'. ISA had an exclusive pavilion dedicated to semiconductor manufacturers or distributors, embedded system manufacturers, embedded hardware and software design house or design service companies, and ecosystem players in embedded electronics. BangaloreIT.biz was also the venue for the prestigious Technovation 2009 Awards ceremony.



ISA panel discussion on Embedded Electronics

In the first session, industry thought leaders set the tone for the discussion. Both the sessions focused on the emerging trends and opportunities in embedded electronics in India.

Panelists:

B.V. Naidu
Chairman, ISA
Chairman, Sagitaur Ventures (I) Pvt. Ltd.

Srini Rajam
Chairman & CEO
Ittiam Systems Pvt. Ltd.

Vinay Shenoy
COO, SemIndia Systems Pvt. Ltd.

Moderator:

S. Janakiraman
President and Group CEO
Product Engineering Services
MindTree Ltd.

Panelists:

Tarak Balaji
Director Technical Centre India, Electronics & Safety
Delphi Automotive Systems Pvt. Ltd.

Sanjeev Keskar
Business Development Director
National Semiconductor (I) Designs Pvt. Ltd.

Praveen Acharya
Vice President, Semiconductor Solutions
KPIT Cummins Infosystems Ltd.

V.R. Venkatesh
Senior Vice President - Business Unit Head Embedded &
Product Engineering Solutions
Wipro Technologies Ltd.

ROUNDTABLE Discussion

The Round Table discussion carries forward the ISA objective of providing members opportunities to interact with and learn from the experiences of leaders. In these interactive sessions, members discuss industry relevant issues with experts in that field.

A round table was held on April 16 2009 at Leela Palace, Bangalore with Hanns Windele, Vice-President, India & Europe, Mentor Graphics on 'Observations and impressions: reflection or reality?' Mr. Windele forecast that the world will see a 'chip recovery' and the industry will emerge from the recession soon at the closed door session.

ISA held knowledge sharing sessions in Bangalore and Hyderabad at Hotel Leela Palace and Taj Deccan respectively on August 12-13 2009 with Jeff VerHeul, Corporate Vice President, Processor



ISA Round Table discussion on India – the emerging automotive design hub with Autocar Professional Magazine



Jeff VerHeul, Corporate Vice President, Processor Solutions, Engineering, AMD with Dr. Pradip K. Dutta, Corporate Vice President & Managing Director, Synopsys (I) Pvt. Ltd. and Executive Member, ISA in Bangalore

Solutions Engineering, AMD. The topic was 'Strategy and organization: operations of global companies in India'. He threw light on geographical strategies that transnational companies like AMD followed. He said that with experience, companies are now adopting geography specific policies and operational practice as opposed to one-policy-suits-all approach of the past. Mr. VerHeul spoke on how global companies can customize and grow locally, while retaining their corporate identity, philosophy and values.

The third roundtable was on 'India – the emerging automotive design hub' in Bangalore on November 19 at Wipro Technologies. The Auto ExCITE 2010 Exhibition of Complete Integrated Technology Ecosystem formed the backdrop for the discussion.

i2ISA Interactive

ISA Interactive i2 provides a platform for members to discuss areas of common interest. i2 Interactives are held at regular intervals at a member facility. The i2s conducted during this year were:

May 9, 2009 at Texas Instruments, Bangalore: The agenda was to felicitate the outgoing Executive Council, unveil the roadmap for ISA for the coming year and meet the incumbent EC.

June 8, 2009 at AMD, Hyderabad: B.V. Naidu shared the ISA vision for the coming year. Ajay Mishra, IAS, Principal Secretary, IT & Communication, Government of Andhra Pradesh and P. Venugopal, Director, Software Technology Parks of India, Hyderabad attended the event.

ISA held budget analysis sessions in July in partnership with Ernst & Young (E&Y) for its members across Bangalore (July 11), Hyderabad (July 15) and New Delhi (July 13) at Broadcom India, NVIDIA Corporation and India Habitat Center, respectively. ISA and the Council of Electronic Hardware Associations (CEHA) jointly hosted the session at India Habitat Center. R. Chandrashekar, IAS, Secretary, Information Technology, Department of Information Technology, Ministry of Communication & Information Technology was the chief guest at this function.

January 21, 2010 at Texas Instruments (I) Pvt. Ltd., Bangalore: ISA organized a session on transfer pricing for its members. Experts from Deloitte Haskins & Sells explained to members the implications of recent developments on transfer pricing and safe harbor on companies operating in India.

March 2-5, 2010 at NXP Semiconductor (I) Pvt. Ltd., Infotech Enterprises Ltd., India Habitat Center and LSI Logic (I) Pvt. Ltd. (Bangalore, Pune, New Delhi, Hyderabad): It was a four-city event with an aim to analyze the Union budget. Members nominated their finance and legal officials for these interactive sessions. On March 4, there was a panel discussion with senior central government officials in New Delhi. There were two panelists from the Ministry of Communications and Information Technology (MCIT), Department of Information Technology (DIT) - R. Chandrashekar, IAS, Secretary, and Rakesh Singh, IAS, Additional Secretary; and two Joint Secretaries from the Ministry of Finance, Department of Revenue - Vivek Johri and Gautam Bhattacharya.

Networking Sessions



A networking session with R. Chandrashekar, IAS, Secretary, Information Technology, Department of Information Technology, Ministry of Communication & Information Technology in Bangalore



A networking session with Raymond Bingham, Managing Director, General Atlantic in Bangalore. Supported by Infotech Enterprises India Pvt. Ltd.

Partner Events

ISA conducted a government-industry meet in September to promote off-grid solar PV programs of MNRE. MNRE and ISA, along with Indian Renewable Energy Development Agency (IREDA), jointly organized the one-day seminar in New Delhi to discuss the modalities of implementing the programs.

ISA supported a one-day meet, titled 'Meet the Gurus' at the International Institute of Information Technology (IIIT), Bangalore on December 15, 2009. Speakers at the event were Prof. Thomas Kallath, Stanford University, and Kanwal Rekhi, Co-founder, The Indus Entrepreneurs (TiE) and mentor of several start-ups in Silicon Valley, USA and India.

ISA Auto CIG represented ISA at a roundtable organized by the Society of Indian Automobile Manufacturers (SIAM). The round table on 'Automotive infotronics and intelligent transport systems' was held on January 6 in New Delhi during Auto Expo 2010.

ISA held a workshop on 'Collaborative semiconductor product development and innovation in India' in association with Dongbu Hi Tek of Korea. A team of senior leaders and managers from Dongbu Hi Tek conducted the workshop on February 9 in Bangalore. The aim of the workshop was to help electronics and semiconductor product companies in India to understand Dongbu Hi Tek's foundry capabilities and related services.

Industry Research

ISA has accelerated the pace of research initiatives in the past one year. The research division has been publishing reports on emerging areas of interest within the industry. These reports, published along with reputed consulting firms in the country, have served as a credible source of data and analysis for policy-makers, investors, analysts, players in the industry, and the media.

This year ISA research initiatives focused on the developing sectors of solar PV and smart cards, besides the regular publications. These reports have gone a long way in generating interest in the industry and positioning it in the global market.



ISA report: The Smart Card Industry: A Semiconductor Perspective

India offers enormous opportunities for the smart card industry. It is expected that 600 million unique identity cards, 50 million e-passports, 100 million health cards, 50 million transport and ticketing cards and 50 million banking cards will be issued over the next seven years in India.

The key objective of the report is to understand the growth potential of the smart card industry in India from a semiconductor industry perspective. The report covers the following areas:

- Current status of the Indian smart card industry
- Key usage trends and application areas of smart cards
- Global and Indian smart card industry practices
- Growth drivers, new segments, emerging application areas, changes in technology and
- Impact of smart cards on the semiconductor industry

Rakesh Singh, IAS, Additional Secretary, Department of Information Technology, Government of India released the report during Technovation Awards 2010, held during Vision Summit.



ISA Member Directory 2010

ISA has been updating its member data on an annual basis. The ISA Member Directory is the only comprehensive compilation of information on companies in the semiconductor sector in India. ISA Member Directory features companies in the ESDM space, from design and embedded software companies and hardware manufacturers to solar PV companies, academic institutes, legal firms and venture funds.

The directory offers complete data on ISA member companies, like the company profile, products and services offered, segments addressed, the employee strength, awards and certifications won by the company, primary contact information, and so on. ISA members span the entire spectrum of the ESDM industry. The directory gives the reader some broad perspectives on the existing ecosystem in India.

Richard Hyde, British Deputy High Commissioner and Country Sponsor, released the fifth edition of the directory during Vision Summit 2010.



ISA WINWire

A regular publication from ISA is the Weekly Industry Newswire (WINWire). WINWire, which has been running for the past four years, is a single source of concise information on industry news and trends from around the world. WINWire goes out to over 18,000 readers globally each week.

Monthly Polls

ISA has started an online, interactive initiative. An online poll is organized every month on a topic of interest to the sector. The polls have resulted in increased traffic to the ISA website, and enhanced user participation. The results are published on the ISA website. The poll results have thrown up useful insights into interests and perceptions regarding the semiconductor sector among website users.

Government Interface

ISA has been engaging with the central and state governments to create a favorable ecosystem for the semiconductor and ESDM industry in India. Governmental support is critical for the growth and sustenance of the industry. ISA regularly represents the industry at various forums within the government. As a knowledge partner on the sector, ISA has helped provide strategic direction to government initiatives.

A key aspect of the ISA-government interface is to provide the solar PV industry the necessary representation during policy formation. ISA has led strategic level interactions on solar PV at the highest level across ministries and departments.

At the state government level, ISA is facilitating the growth of the sector across various states. ISA is creating opportunities for industry-government interactions at the state level.

Listed below are activities with various government entities in the past one year:

Government of India

Department of Information Technology (DIT), Ministry of Communications & Information Technology (MCIT)

ISA is focused on developing strategic initiatives within the government to aid in the growth of the ESDM and semiconductor industry. ISA headed the sub-task force set up by DIT to formulate a growth plan for the ESDM sector. ISA recommended several measures to fuel the growth of the sector, and these recommendations were taken up at the highest levels at DIT.

DIT authorized ISA to conduct a study it funded on the semiconductor and embedded design services industry.

The past few years have seen active participation of DIT senior officials in ISA events. DIT and Software Technology Parks of India (STPI) supported Vision Summit, ExCITE and the Technovation Awards. Additional Secretary, DIT, was the guest of honor at these events.

ISA, along with DIT and STPI, held workshops and seminars on policy initiatives of the government on the industry.

Ministry of New & Renewable Energy (MNRE)

The level of interaction between ISA and MNRE increased during the year. ISA was actively involved in finalizing the policy guidelines for the Jawaharlal Nehru National Solar Mission (JNNSM), thereby providing an impetus to the domestic solar PV industry. ISA made and facilitated several presentations and interactive discussions regarding policy matters among senior officials of solar PV companies and the ministry, including Dr. Farooq Abdullah, Minister, Ministry of New and Renewable Energy (MNRE).

Throughout the year, MNRE participated in various solar PV centric events and delegations organized by ISA. MNRE supported an ISA delegation visit to the 24th European Solar Energy Exhibition and Conference (EU PVSEC) in Hamburg, Germany, and Solarcon in Hyderabad.

ISA has also actively participated in meetings convened by MNRE.



ISA conducts workshop with MNRE & IREDA to promote the solar PV programs offered by the Government of India

Other Government of India Ministries /Departments / Entities

Office of Principal Scientific Adviser (PSA), Government of India

ISA has developed a close working relationship with the office of PSA to the Government of India. The office of PSA supported a study on the solar PV industry that ISA had conducted.

National Manufacturing Competitiveness Council (NMCC)

ISA had several meetings and presentations with senior officials of NMCC that focused on the need to encourage domestic electronics manufacturing.

Prime Minister's Office

ISA interacted with the office of Special Envoy to the Prime Minister relating to policy initiatives of the government on solar PV. ISA has submitted its recommendations to encourage both domestic solar PV manufacturing and its applications.

Department of Industrial Policy & Promotion (DIPP), Ministry of Commerce & Industry

ISA has collaborated with DIPP on policy initiatives for the solar PV industry. The department has appreciated the presentations that ISA has made on the subject. The first draft of the committee constituted for that purpose includes some of ISA's key recommendations.

Ministry of Power (MoP)

ISA has expanded its scope of activities to other important entities, like the Ministry of Power and Central Electricity Authority (CEA). ISA organized a visit by the Chairman, CEA and its top officials to solar PV member companies in the National Capital Region to update them on important aspects of the solar PV industry, like technology, market opportunities, manufacturing process and applications. Through this interaction, member companies updated officials of the latest developments and processes in the SPV sector.

As a spokesperson of the solar PV industry, ISA represented the concerns of the industry, like low tariffs, with the Central Electricity Regulatory Commission (CERC). ISA successfully represented this issue, following which the CERC authorized a hike in tariff.

State Governments

ISA deepened its engagements with state governments, particularly with the Governments of Andhra Pradesh, Karnataka and West Bengal.

Government of Andhra Pradesh

ISA has supported the activities of the Government of Andhra Pradesh in its efforts to promote solar PV manufacturing in the state. ISA provided technical support in the evaluation of various proposals that the government received from players in this sector. Many investors have conveyed their interest in setting up solar PV manufacturing facilities in the state.

The ISA flagship event for the solar PV sector, Solar PV Conclave (Solarcon), in Hyderabad received wholesome support from the state government. The state backed ISA's study on the solar PV industry. ISA played an active role in an MoU signed between the government and Fraunhofer Institute of Solar Energy. The MoU includes activities to enhance the growth of the solar PV sector in the state.

Government of Karnataka

On the request of the Government of Karnataka, ISA provided inputs in the drafting the semiconductor policy for the state. Karnataka Chief Minister B.S. Yeddyurappa released the policy at Vision Summit 2010. The policy includes measures to retain the competitive edge of the state in semiconductor design and policy initiatives to attract investments in the manufacturing sector.

Government of West Bengal

The Government of West Bengal invited ISA for round table discussions to promote the electronics industry in the state. At the request of the state government, ISA has submitted a draft for an exclusive Electronic Systems Design and Manufacturing Policy.

Key Media Coverage

ISA inks MoU with UK Trade & Investment *India Blooms News Service*



Jane Owen, Director, UKTI, Sir Richard Stagg, British High Commissioner, B.V. Naidu, Chairman, ISA (L to R)

New Delhi/Kolkata, Sept 1 (IBNS) India Semiconductor Association (ISA), the premier trade body representing the Indian semiconductor, systems and solar photovoltaic industry, signed a Memorandum of Understanding (MoU) with the UK Trade & Investment (UKTI) at New Delhi.

The MoU focuses on developing and encouraging business ties and technology exchange between Indian and UK semiconductor industries through 'Global Value Chain Partnerships'.

This agreement will mean that Indian and UK firms will be working together on agreed business opportunity areas, combining complementary know-how, technology, IP and other capabilities. This is also a concerted effort to jointly access, develop and deliver business solutions more effectively in this segment, said a company release.

Jane Owen, Director, UK Trade and Investment, India said, "India and the UK play a significant part in the semiconductor industry but together I believe our two industries can do much more. UK is a world leader in innovation and India has a massive electronic manufacturing sector which drives the semiconductor industry. We look forward to a committed, fair and dependable partnership."

Poornima Shenoy President said, "There is a tremendous synergy between chip design companies in the UK and India. An increasing high degree of complexity and innovation in chip design is taking place in both geographies. We are seeking the multiplier effect of companies that can focus on developing products for the domestic market."

In continuation of this association, a business delegation of embedded software and chip design companies from India would be going to the UK in September to discuss business opportunities.



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IT SOFTWARE

ISA sees immense potential in the Indian semi-con industry

In spite of the global economic recession, the semi-conductor industry in India has maintained a steady growth rate. ADVANTAGE BENGAL TEAM got an opportunity to speak to POORNIMA SHENOY, PRESIDENT, INDIA SEMI-CONDUCTOR ASSOCIATION (ISA) to know more about the future trends of the semi-conductor industry in India and the future road-map of the Association

Give us an idea about the present scenario of the semi-conductor industry in India. Has the global economic downturn affected the investment opportunities/prospects of the semicon industry in India?

The global recession has affected the electronics industry and this definitely impacted the semiconductor industry. Elsewhere growth was in the early single digit numbers. In India we estimate that the growth has been in early double digits. Although this is lower than our projections, it is one of the few countries in the world which has seen a growth story. Several companies have taken the opportunity to consolidate their business, hive off non productive units or make acquisitions. We see the chip industry reviving in 2010 - numbers are awaited.

In March 2009, we had done a confidence poll to understand the industry's sentiment; nearly all the respondents were of the opinion that it was necessary to innovate and create products and services for the domestic market to grow and to survive. They felt that the market had enormous potential and it was up to the government to create favorable policies to boost spending on electronics.

Please share with us some of the recent initiatives of ISA.

ISA is focused on supporting the business of its members and the sector through networking events, industry data and working with policy

52 ADVANTAGE BENGAL

INDIAN SEMICONDUCTOR INDUSTRY SAYS IT'S A GOOD BEGINNING; FINANCIAL ASSISTANCE, HOWEVER, IS LOWER THAN WHAT MANY EXPECTED

Karnataka Semicon Policy arrives



From left: Convener of Vision Summit Dr Pradip Dutta, chairman of ISA BV Naidu, Karnataka CM BS Yeddyurappa, and IT minister Katta Subramanya Naidu.

GOVTAM DAS BENGALURU

Feb 2: The Karnataka Semiconductor Policy arrived on Tuesday, a good 18 months late. However, the state became the first in the country to announce a development that an industry watcher feels could mark the beginning of a "China-like rise". In China, all provinces compete with each other to attract investments.

Preliminary reading of the policy, unveiled by chief minister BS Yeddyurappa at the India Semiconductor Association's "Vision Summit" in Bengaluru, invoked varied reactions from the industry. "Fantastic", "positive", "humble".

The policy gets the sector more visibility and could prove instrumental if Karnataka's dream of becoming an electronics market of \$120 billion by 2020 is to justify.



The essence of the policy is to encourage the sector. It is expensive to file patents. Assistance for filing patents is fantastic. It encourages innovation. The policy is a great start to creating a favourable environment.

BOBBY MITRA, MD, Texas Instruments



I am happy to see the policy talks about setting up solar farms in four places in Karnataka. The policy considered the solar sector under the ambit of semiconductors. The PV cell and panel manufacturing ecosystem is very similar to the semiconductor ecosystem.

DR MADHUSUDAN ATRE, president, Applied Materials India

- HIGHLIGHTS**
- Develop tier 2 cities as design clusters
 - Fund for silicon design start-ups
 - Financial assistance towards patent registration
 - Karnataka Fund for R&D expense
 - Promote development of solar farms
 - Set up school under IIT
 - Fiscal incentives under Industrial Policy

fresh engineering graduates. Financial assistance, though not guaranteed, will be extended to firms wanting to protect their IP in accordance with the incentives provided in the Industrial Policy 2009-14.

The government is also sanctioning an additional amount of Rs 25 crore to the Karnataka Information Technology Venture Capital Fund. The fund, set up in 2008, aims to make long-term investments in start-up technology companies, help them develop competitive

although there is a distinctive silicon bias, some of the fiscal incentives can be leveraged by other sectors. The policy brings in a lot of favourable energy incentives. The incentives will

expense help appears way too steep — developing IP for mobile phones is any complex process, from scratch, for instance, can take up to three years and 200 man effort per year. That cost upwards of \$2 million. It is a small part of the total cost. The incentives

VICTORY

The policy is a step in the right direction and because it is startup friendly, it induces many barriers to entry that a new player must face. This is a victory for the industry.

INDIA SEMICONDUCTOR ASSOCIATION'S TECHNOVATION AWARDS 2010 WINNERS

START-UP TO WATCH
Winner: Saankhya Labs
Honourable mention: Cosmic Circuits

BEST ELECTRONICS PRODUCT CONSUMER
Winner: VuNow, the internet TV platform from Verismo Networks
Honourable mention: Quillpad, from Tachyon Technologies

ENERGY
Winner: Solid Multilight (solar LED lantern), from Gautam Polymers
Honourable mention: Solar powered 'Egg lamp', from Kotak Urja

HEALTHCARE
Winner: Mozzquit mosquito trap, from Leowin Solutions
Honourable mention: USB Power 3 Lead ECG Monitor, from Infotech Enterprises

SECURITY
Honourable mention: Automatic License Plate Recognition System, from Kritikal Solutions

TELECOM
Winner: ELAN, from Tejas Networks

OTHER
Winner: Pre Shower - 32 Channel Silicon Strip Detector for CERN, Geneva, from BEL
Winner: Remote controlled system for power tillers, from Mangalore Robotronics Technologies
Honourable mention: IMFAST - mobile financial application secure terminal, from Integra Micro Systems

TECHNOMENTOR AWARD
Academia: Shanti Pavan, IIT, Madras
Industry: Sreeram Vasanthi, Websol Energy System

TECHNOVISIONARY AWARD
Kumar N Sivarajan, co-founder & CTO, Tejas Network

Solar panels in Tirupati & other shrines soon: Farooq

TIMES NEWS NETWORK

Union minister for New and Renewable Energy Farooq Abdullah on Wednesday unveiled solar photovoltaic panels at the Tirumala and Golden temple at Amalapuram, stressing the importance of reducing power consumption and



ALTERNATIVE ENERGY: Union minister for new & renewable energy Farooq Abdullah unveils the logo for "Solarcon India 2009" - a global meet to be held from November 9-11 - in the city on Wednesday

Centre has taken up the solar panels in all a similar manner in the country. The government has allocated Rs one crore for the installation of solar panels at all Raj Bhawan, State Government of Ministers, ministers' residences and public buildings. The use of solar panels in the government side, he said, will be a good example for the private sector. Union minister K Royappa said that the government centre, a solar panel installation minister Farooq Abdullah also writing to encourage the use of solar panels in manufacturing facilities at Fab City, Abdullah said he would also take up the issue of reducing consumption of solar panels with finance minister Pranab Mukherjee. The Union minister also expressed confidence that by 2020 about 20,000 MW of power would be generated from non-conventional energy.

Earlier, Farooq unveiled logo for "SOLARCON-India 2009" global conference organised between November 9 to 11.

INNOVATION TAKES PRECEDENCE HERE

THE vision summit of the India Semiconductor Association (ISA) was not just about talking but also various industry leaders have also served as a platform to showcase various innovative products, largely by non-entrepreneurs.

A 100kg robot, remote controlled system for power silencers and a full fledged PC which can be attached to the headrest of a car were just some of the products displayed here.

Crown Innovations, a Bangalore based start-up, has developed a mosquito net which makes the human body, attract mosquitoes and help them die without the use of any harmful chemicals.

The product with a patented technology is priced at Rs 2,000 and would be available in the market in two months.

"A special additive used while fabricating the device has the capacity to attract female mosquitoes," Mr Nataraja said. The "quitos", Mr Nataraja said, they are instantly killed and collected in a bin at the bottom.

Another innovative product showcased at the summit was directly applicable to the farming community. Praveen V Kumar (M) in 2008 made an unmanned ground vehicle (UGV), but found no takers from the defence industry when he expected to show some interest. However, this did



not deter Kumar to explore other applications and the result is his innovation. The converted tiller and a tree climbing robot that can cut the fruiting branches and harvest the fruit (for aromatic and essential oils) in its final testing phase. Now a farmer can avoid the strain of walking by using the power tiller continuously for hours controlling it remotely through a remote control.

The technology comes in the form of a kit that can be attached to a power tiller and attached on the remote controlled operation with a maximum operating range of 100 meters. "Physical damage to

lens and the shoulder of the operator can be avoided," said Mr Kumar, a former Tejas Robotics company called Mangalore Robotics Technologies which is into the development of robotics for the agriculture, industry and consumer electronics. The products have been accepted by the DST (Department of Science and Technology) under the Tepp scheme for funding up to Rs 45 lakh for commercialisation under the guidance of NITK, STPI, Bangalore.

The public sector units (PSUs) such as Bharat Electronics Limited (BEL) and Bharat Atomic Research Centre (BARC) are supplying detectors to the Bangalore experiment. These detectors will play a crucial role in detecting sub-atomic particles that are expected to be produced after the collision of proton beams during the "Big Bang" experiment being carried out by the European Organisation for Nuclear Research (CERN). The proton beams collide with each other in the 27 km long tunnel built underground near the Franco-Swiss border near the Franco-Swiss border near Geneva in Switzerland. CERN has built a Large Hadron Collider (LHC) that lies in the tunnel which will witness the collision of opposing particle beams at high energy levels. The experiment is expected to unravel most fundamental questions in physics and shed light on the origin of the universe. "We have supplied the neutron detectors to CERN," said Rajendra Kari S, manager, BEL. Besides, many premier research and development institutions from countries such as USA and Japan have shown interest for using their high energy detectors for their high energy physics experiments.

Another company, Te Veda Infosol Systems has developed an electronic device that can be attached to residential fans, industrial fans and windmills and can display messages and can be sent remotely from a computer or a handheld device. "We are looking at interesting application for places like airports, educational institutions and residential buildings," said Te Veda Infosol Systems product marketing director Ganesh Radhakrishnan.

You can strike gold while the sun shines

Scientists Doing Solar Research Can Get Slice Of 10-Million Euro Fund Soon

Prashanth G N | TNS

Bangalore: The future is solar. Solar bikes, cars, buses, trains and even space vehicles. Even if it seems like a fantasy at this stage, work is under way at a feverish pace to get into the solar frame of life. There's plenty of money in solar renewables and climate change.

Europe, which is way ahead of the rest of the world in solar power, is giving it a push in India too. A researcher from any science institution in India can now get a share of a 10 million Euro-India fund if he or she can build a solar energy system over a three-year period. Researchers can propose theoretical models to the European Commission (EC) and the Indian Department of Science and Technology (DST), who will take a call on their viability because the EC and DST are serious about useful and practical solar systems that emerge from research.

EU WILL HELP
DST officials told TOI that solar projects have to be economically viable.



Researchers can propose theoretical models to the European Commission and the Indian Department of Science and Technology, who will then take a call on their viability

commercially attractive, environmentally friendly and sustainable. The projects should also fit the principle of clean energy technologies and aid energy security without creating any adverse impact on climate.

Indian researchers will work with EU researchers and institutions who will help incubate a project so that a product emerges after the period of research. At scale production will be viable and if the product or system is viable in all ways, joint patenting of the system as well as the know-how that has gone into it would be possible," officials said.

The Indo-EU collaboration is looking at achieving cost reduction, higher efficiency and reliable solar photovoltaic devices and



FAB'ULOUS FUTURE: (From left) ISA Chairman B V Naidu, Chief Minister B S Yeddyurappa, IT Minister Katta Subramanya Naidu & Union Department of IT Additional Secretary Rakesh Singh releasing the Karnataka Semiconductor Policy at the ISAVision Summit 2010 in Bangalore on Tuesday. (PHOTO)

Decision on IT task force proposals by March: Govt

BANGALORE: The Government...

...to set up a Karnataka Semiconductor Excellence Fund with a corpus of Rs 100 crore. The fund, in an effort to encourage innovation and R&D in design, product development, telecom etc., according to officials, will be available to companies covering 50 per cent of their R&D expenditure subject to a limit of Rs 10 crore per annum. It would be available through 10 per cent of the State's IT tax revenue. Preference, they said, would be given to start-up graduates by providing them with a 50 per cent discount through project financing in the college sector.

new tech
reference would
entrepreneurs
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crystal displays,
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and other

Call for setting up 'national electronics mission'

Clusters of excellence needed to promote industry

Our Bureau
Bangalore, Feb 7

The electronics system design and manufacturing industry has called for the setting up of a 'national electronics mission' - a nodal agency which will interface with the Prime Minister's Office to raise the functioning of the industry.

The other recommendations made by a sub-committee of the taskforce set up by the Government's IT Department for promoting the electronics and semi-conductor industry, include setting up of clusters of excellence in various regions across the country, encouraging made for India goods, creating an R&D fund, rationalising the tax structure and promoting skill development.

Presenting the recommendations to the media, on the sidelines of the 5th Vision Summit organised by the Indian Semi-conductor Association (ISA), Mr B V Naidu, Chairman, ISA, said the demand in the electronics market in the country is at \$45 billion and projected to grow to \$400 billion by 2020.

The human capital intensive electronics and semi-conductor industry employs around 6.4 million people. Currently, the industry's contribution to GDP is 0.7 per cent and it has the potential to grow to 20 per cent by 2020, said Mr Naidu. While the fu-



Industry vision: (from right) Mr Fra Chairman, ISA, Dr G Madhavan Nair, Bangalore; and Dr Omkar Rai, Director, Semi-conductor Association in Banga

ture holds promise, there are many challenges that can stymie the growth of the industry, the committee report says. The challenges are inadequate infrastructure, tax structure, supply chain and logistics, inflexible labour laws, limited R&D focus and funding. India also has to watch out for competition

Products being developed by small cos will reshape markets

Debanu Mahapatra

It's not just the innovation labs of global technology giants like IBM, CISCO and others that are driving out products which are changing our lives. The backyards of small Indian firms have also become breeding grounds for new ventures, some of which could reach commercial phase as early as six months from now.

Innovations flourish in the backyards of Indian firms

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ISA member list

A

Achronix Semiconductor (I) Pvt. Ltd.
Actel Semiconductor (I) Pvt. Ltd.
Alcatel Vacuum Technology
ALMT Legal
Altera Semiconductor (I) Pvt. Ltd.
AMD India Engg Centre Pvt. Ltd.
Analog Devices (I) Pvt. Ltd.
Apache Design Solutions Pvt. Ltd.
Applied Materials (I) Pvt. Ltd.
Applied Micro Circuits India (I) Pvt. Ltd.
Aristos Electronic Mfg. Services Pvt. Ltd.
Arm Embedded Technologies Pvt. Ltd.
ASM Technologies Ltd.
Atrenta (I) Pvt. Ltd.

B

Beceem Communications Pvt. Ltd.
Bergen Systems Pvt. Ltd.
Bharat Electronics Ltd.
Broadcom India Research Pvt. Ltd.

C

Cadence Design Systems (I) Pvt. Ltd.
Calypto Design Systems
Cellworks Research (I) Pvt. Ltd.
Circuitsutra Technologies Pvt. Ltd.
Cir-Q-Tech Takotechnologies Pvt. Ltd.
CMC Ltd.
Conexant System Pvt. Ltd.
Cortina Network Systems Pvt. Ltd.
Cosmic Circuits Pvt. Ltd.
Coware (I) Pvt. Ltd.
Cypress Semiconductor Tech (I) Pvt. Ltd.

D

Delphi Automotive Systems PVT. Ltd.
Denali Design Systems Pvt. Ltd.

E

E- Infochips Ltd.
EDWARDS (I) Pvt. Ltd.
Embedded System Solutions Pvt. Ltd.
Emmvee Solar Systems Pvt. Ltd.
EVE Design Automation (I) Pvt. Ltd.
Evolve Technolgoies & Services Pvt. Ltd.

F

Farnell Electronics (I) Pvt. Ltd.
Freescale Semiconductor (I) Pvt. Ltd.

H

HCL Technologies Ltd.
Hughes Systique (I) Pvt. Ltd.

I

Ibiden Singapore Pvt. Ltd. India Liason Office
IBM (I) Pvt. Ltd.
IIIT - Pune
IIIT Bangalore
Imagination Technologies (I) Pvt. Ltd.
Indosolar Ltd.
Indrion Technologies
Infineon Technologies Ltd.
Infotech Enterprises Ltd.
Insilica Semiconductors (I) Pvt. Ltd.
Intel Technology (I) Pvt. Ltd.
Intersil Analog Services Pvt. Ltd.
Ittiam Systems Pvt. Ltd.
iWave Systems Technologies Pvt. Ltd.

J

Jupiter Solar power Ltd.

K

Kacper Technologies
Kasura Technologies Pvt. Ltd.
Kawasaki Microelectronics Inc, India
KLA Tencor Software (I) Pvt. Ltd.
KPIT Cummins Info Systems Ltd.
Krishnamurthy & Co.
KSK Surya Photovoltaic Ventures Pvt. Ltd.
KTwo Technology Solutions

L

Lanco Solar Pvt. Ltd.
Larsen & Toubro Ltd.
Lovely Professional University
LSI Logic (I) Pvt. Ltd.

M

Majmudar & Co.
Mandate Chips & Circuits Pvt. Ltd.
Manipal Universal Learning Pvt. Ltd.
Marvell Semiconductor Pvt. Ltd.
Mentor Graphics (Sales & Services) Pvt. Ltd.
Microchip Technology Designs (I) Pvt. Ltd.
MindTree Consulting Pvt. Ltd.
MosChip Semiconductor Technology Ltd.
Moser Baer India Ltd.
MSPL Ltd

N

N.I.Systems India Ltd.
National Institute of Science & Technology
National Semiconductors (I) Design
NCS Sugars Ltd.
NEC Electronics Singapore Pte. Ltd.
Netlogic Semiconductor Pvt. Ltd.
Novellus Systems (I) Pvt. Ltd.
NXP Semiconductors (I) Pvt. Ltd.

O

Ojas Advisory Services Pvt. Ltd.
Open Silicon Research Pvt. Ltd.

P

PathPartner Technology Consulting Pvt. Ltd.
PES Institute of Technology
PMC-Sierra (I) Pvt. Ltd.
PRO Logistics (I) Ltd.

Q

Qlogic (I) Pvt. Ltd.
Qualcomm (I) Pvt. Ltd.
QuantumThink Technologies Pvt Ltd.

R

Rambus Chip Technologies (I) Pvt. Ltd.
RV VLSI Design Centre

S

Sagitaur Ventures (I) Pvt. Ltd.
Samsung India Software Operations
SanDisk India Device Design Centre Pvt. Ltd.
Sankalp Semiconductor Pvt. Ltd.
Sasken Communication Technologies Ltd.
Sem India Systems Pvt. Ltd.
Sequoia Capital
Signet Solar Inc.
SmartPlay Technologies (I) Pvt. Ltd.
Softjin Infotech Pvt. Ltd.
Solar Semiconductor Pvt. Ltd.
Sonic Chips Pvt. Ltd.
STMicroelectronics Pvt. Ltd.
SureWaves
Surge Forth Technologies Pvt. Ltd.
Synfora India Engineering Centre Pvt. Ltd.
Synopsys (I) Pvt. Ltd.

T

Tata BP Solar
Tata Consultancy Services
Tejas Networks Ltd.
Tensilica Technologies (I) Pvt. Ltd.
Tessolve Services Pvt. Ltd.
Texas Instrument (I) Pvt. Ltd.
Tomen Eelctronics (I) Pvt. Ltd.
Toshiba Embedded Software (I) Pvt. Ltd.
Transwitch (I) Pvt. Ltd.
TSMC

V

Velankani Technology Parks Pvt. Ltd.
Vikram Solar
Vinjay Software Systems Pvt. Ltd.
Virage Logic International
Vitesse Semiconductor (I) Pvt. Ltd.

W

Waaree Energies Pvt. Ltd.
WEBEL SL Energy Systems Ltd.
WhizChip Design Technologies Pvt. Ltd.
Wipro Technologies

X

Xilinx India Technology Services Pvt. Ltd.



India Semiconductor Association

Head office: UNI Building, Millers Tank Bund Road, Bangalore - 560 052 India
Phone: +91 80 4147 3250 Facsimile: +91 80 4122 1866

New Delhi office: DBS Business Centre, First Floor World Trade Tower
Barakhamba Lane, Connaught Place, New Delhi - 110 001 India

www.isaonline.org