



SREYAS INSTITUTE OF ENGINEERING AND TECHNOLOGY
HYDERABAD

Department of Mechanical Engineering

Report

On

Innovative Product Display: Sreyas Mobile Air Conditioner (SMAC)



AKELLA SYSTEMS

**CII-Edu Summit: Reimagining the Future of Higher
Education _ JNTUH Innovation Zone**

Organised by



Confederation of Indian Industry

|15TH NOVEMBER 2019| Hotel Park Hyatt, Hyderabad|





Product Display: Sreyas Mobile Air Conditioner (SMAC)

Department of Mechanical Engineering Students of Sreyas Institute of Engineering and Technology with support of Akella Systems Team has displayed **Innovative Product** named “**Sreyas Mobile Air Conditioner (SMAC)**” at JNTUH Innovation Zone in “**CII- Edu Summit: Reimagining the Future of Higher Education**” organized by Confederation of Indian Industry (CII), Government of Telangana and JNTUH on **15th November 2019** at Hotel Park Hyatt, Banjara Hills, Hyderabad

Akella Systems is the one and only SMAC Manufacturing Facility in Hyderabad which has been setup in the institute itself under the **Industry-Institute Collaboration**.

Dr Suresh Akella, Director R&D and Principal is heading the Akella Systems and guiding all students and Staffs in the field of R&AC (Refrigeration and Air Conditioning). The product is being widely recognized and supported by MSME, TEQIP-III, EDC, ISHRAE and JNTUH

Department of Mechanical Engineering Staffs and Students are actively involved in designing and developing the product for over the years.

Students go through regular internships and industrial training to get practical learning experience.



SREYAS INSTITUTE OF ENGINEERING AND TECHNOLOGY



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HYDERABAD

Industry Institute Collaboration With Akella Systems

CII-Edu Summit : 15th Nov-2019

Industry Institute Collaboration With Akella Systems

Portable Air Conditioner (SMAC)

Names of The Team

Mr.B.Akhil Reddy, Mr. V.Sai Ram Varma, Mr.G.Veeresh Reddy, Mr. N.Venugopal and Mr.S.Pothan Kumar



Key Ideas:

Scroll Blowers for Noise Reduction
Static Balanced Blowers for Noise Reduction
Capillary Optimization
Fine Tuned Refrigerant Charge
Flexible Hose Connection for Variable Window Spaces

Contributors:

Organizations Supported: MSME, TEQIP -III, JNTUH, EDC and IIPC
Guidance of Industry: Tecumseh Products Limited
Association: ISHRAE
Institute: SREYAS Management
Industry: Akella Systems
Principal: Dr. Suresh Akella, Director of R&D, SREYAS
Staffs: Mechanical Engineering Department, SREYAS
Students-PhD, M-Tech, B-Tech and Interns of SREYAS

GST Reg No of Company
36ABNFA5812G1ZG

Dr.Suresh Akella, MD for Akella Systems
Mr. Kasuba Sainath, Associate Professor , TEQIP Coordinator & EDC Coordinator
Mr. Praveen B Ronad, Assistant Professor, SPoC J-Hub From SREYAS



Portable Air Conditioner (SMAC)



Names of The Team

Mr.B.Akhil Reddy, Mr. V.Sai Ram Varma, Mr.G.Veeresh Reddy, Mr. N.Venugopal and Mr.S.Pothan Kumar

Problem: To Provide Comfort Cooling at Low Cost
Product: Sreyas Mobile Air Conditioner (SMAC)

Key Ideas:

- ★ Scroll Blowers for Noise Reduction
- ★ Static Balanced Blowers for Noise Reduction
- ★ Capillary Optimization
- ★ Fine Tuned Refrigerant Charge
- ★ Flexible Hose Connection for Variable Window Spaces

Approach:

Designed and patented heat loss paths for the high side and low side of the Air Conditioning System (SMAC)

User Stories:

- ★ Industry is established in the Sreyas Institute
- ★ Staffs and students developed through FDP's and Internships respectively.
- ★ Presently run for urban and remote areas
- ★ No Technician required to installation
- ★ Maintenance Free

Technology: A total insulating Material of composite materials were used to build portable mobile air conditioners.
Technology of design, procurement, vendor development, assembly, testing, quality and reliability were designed and established.
Seven trail run systems are in the institute for over a year.
Initial market started last year

Recognition received:

- ★ Patented Product
- ★ Patent Applicant: Dr. Suresh Akella
- ★ Patent Application No: 201841043732
- ★ Title of Invention: "An Apparatus and a Method for Cooling and Heating Surrounding"
- ★ Akella Systems Company has taken this product for development
- ★ GST Reg No of Company: 36ABNFA5812G1ZG

Contributors:

- ★ Organizations Supported: MSME, TEQIP -III, JNTUH, EDC and IIPC
- ★ Guidance of Industry: Tecumseh Products Limited
- ★ Association: ISHRAE
- ★ Institute: SREYAS Management
- ★ Industry: Akella Systems
- ★ Principal: Dr. Suresh Akella, Director of R&D, SREYAS
- ★ Staffs: Mechanical Engineering Department, SREYAS
- ★ Students-PhD, M-Tech, B-Tech and Interns of SREYAS



In Pics: Dr. A. Govardhan, Rector, JNTUH with Mr. K Sainath Associate professor of Mech, TEQIP-III, EDC and INSHRAE Coordinator , Mr. Praveen B Ronad, Assistant Professor of Mech and SPOC J-Hub from SREYAS with Students Team of SREYAS and Akella Systems



In Pics: Dr. Padmaja Rani, TEQIP-III Coordinator JNTUH, Dr. N Yadaiah Registrar JNTUH with Team SREYAS





Team



In Pics: (L-R)

1. Mr. S. Pothan Kumar, IV year B.Tech Mech and Technical and Marketing Intern at Akella Systems
2. Mr.N. Venugopal, 4th Year B.Tech Mech and President ISHRAE Sreyas Student Chapter, Intern at Akella Systems
3. Mr. B. Akhil Reddy, Production Engineer and Alumni, Akella Systems
4. Mr. K Sainath, Associate Professor of Mech, TEQIP-III, EDC and ISHRAE Coordinator
5. Mr. Praveen B Ronad, Assistant Professor of Mech and SPoC J-Hub from SREYAS
6. Mr. V.Sai Ram Varma, Service Engineer, Akella Systems
7. Mr. G. Veeresh Reddy, Technician, Akella Systems

Acknowledgments:

We would like to Thank Sreyas Management for providing financial support to attend Summit. We thank our beloved Principal Dr. Suresh Akella, TEQIP-III JNTUH Coordinator Dr. Padmaja Rani and Dr.G. Vijayakumari , Director of J-Hub, JNTUH for providing all necessary support to exhibit our product at such an extraordinary event.

Finally, We Thank Mechanical Engineering HoD, Staffs, Students, Interns and Akella systems team for their immense contribution towards design and development of the product

Report Prepared By: Mr. Praveen B Ronad, Assistant Professor of Mech and SPoC J-Hub from SREYAS