

DEPARTMENT OF ELELCTRONICS COMMUNICATION AND INSTRUMENTATION ENGINEERING

Initiatives and Implementation of Sustainable Development Goals (SDGs)
KITS Warangal

Department Name: Electronics Communication and Instrumentation Engineering (ECIE)

R & D activities towards SDGs -

Research papers

CAY 2024-25 (As per NBA)

S.No	Name of the Faculty	Title of the Paper	SDGs addressed	SDG Justification
1.	Prof. K. Sivani	J. Battini and S. Kosaraju, "An efficient single-stage carry select adder using excess-1 FinFET circuit in 22 nm technology," Semicond Sci Technol, vol. 39, no. 9, Sep. 2024, doi: 10.1088/1361-6641/ad6e15.	SDG9 - Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
2.	Prof. K. Sivani	C. P. Kumar and K. Sivani, "Ultra Low Power and High Speed Electronic Circuits Using Double Gate Tunnel Field Effect Transistor," <i>Journal of The Institution of Engineers (India): Series B</i> , pp. 1-21, 2024.	SDG9 - Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
3.	Prof. K. Sivani	C. P. Kumar and K. Sivani, "Design of a Double Gate Tunneling Field Effect Transistor (DG-TFET) and Performance Analysis," <i>Journal of Integrated Circuits and Systems</i> , vol. 19, no. 2, pp. 1-12, 2024.	SDG9 - Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
4.	Dr. B. Jeevan	J. Battini and S. Kosaraju, "An efficient single-stage carry select adder using excess-1 FinFET circuit in 22 nm technology," Semicond Sci Technol, vol. 39, no. 9,	SDG9 - Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication,

		Sep. 2024, doi: 10.1088/1361-6641/ad6e15.		and digital infrastructure
5.	Sri B. Venumaswar Rao	V. R. Bondala and A. R. Komalla, "An efficient model for extracting respiratory and blood oxygen saturation data from photoplethysmogram signals by removing motion artifacts using heuristic-aided ensemble learning model," <i>Comput Biol Med</i> , vol. 180, p. 108911, 2024.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
6.	Sri B. Venumaswar Rao	B. V. Rao, E. H. Krishna, and K. A. Reddy, "Wavelet Transform Generated Inherent Noise Reference for Adaptive Filtering to De-noise Pulse Oximeter Signals," <i>Serbian Journal of Electrical Engineering</i> , vol. 21, no. 2, pp. 251–273, Jul. 2024, doi: 10.2298/SJEE2402251R.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
7.	Dr. K. Shailaja	S. Kotte and J. R. K. Kumar Dabbakuti, "Smart 6G Sensor Network Based Human Emotion Analysis by Machine Learning Architectures," <i>Wirel Pers Commun</i> , pp. 1–17, 2024.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
8.	Dr. K. Shailaja	S. Kotte and J. R. K. K. Dabbakuti, "EEG Signal-Based Emotion Detection of Parkinson's Patients for Classification and Feature Extraction by Deep Learning Architecture," <i>SSRG International Journal of Electronics and Communication Engineering</i> , vol. 11, no. 10, pp. 267–276, Oct. 2024, doi: 10.14445/23488549/IJECE-V11I10P122.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
9.	Dr. K. Shailaja	S. Kotte and J. R. K. K. Dabbakuti, "EEG Signal in Emotion Detection Feature Extraction and Classification using Fuzzy Based Feature Search Algorithm and Deep Q Neural Network in Deep Learning Architectures," <i>SSRG International Journal of Electronics and Communication Engineering</i> , vol. 10, no. 5, pp. 84–94, May 2023, doi:	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact

		10.14445/23488549/IJECE-V10I5P108.		
--	--	------------------------------------	--	--

Note: Create a separate table for every Academic Year

CAYm1 2023-24 (As per NBA)

S.No	Name of the Faculty	Title of the Paper	SDGs addressed	SDG Justification
1.	Dr. K. Sivani	B. Jeevan and K. Sivani, "A new 18nm FinFET-based Programmable Logic Array type Multiplexer for High-speed and Low-Power applications," in 2023 <i>IEEE 20th India Council International Conference, INDICON 2023</i> , Institute of Electrical and Electronics Engineers Inc., 2023, pp. 1205–1210. doi: 10.1109/INDICON59947.2023.10440683.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
2.	Dr. K. Sivani	C. P. Kumar and K. Sivani, "Double Gate TFET Simulation with Different Gate Oxides and Thickness," in 2023 <i>14th International Conference on Computing Communication and Networking Technologies (ICCCNT)</i> , 2023, pp. 1–4.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
3.	Dr. K. Venu Madhav	Madhav, K. V., Krishna, E. H., & Reddy, K. A. (2024). Improved Bivariate-VAR Model for Extraction of Respiratory Information from Artifact Corrupted ECG and PPG Signals. <i>New Generation Computing</i> , 1-19.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
4.	Dr. M. Raghu Ram	K. Srinivas, B. Shashikanth, M. Raghuram, and K. Venumadhav, "Journal of Advanced Zoology Animal Wearables and the Transformation of Movement Ecology Through IoT", [Online]. Available: https://jazindia.com	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
5.	Dr. M. Raghu Ram	M. Divija and R. Ram, "IoT based smart irrigation module for smart cultivation," in 2022 <i>International Conference on Wireless Communications Signal Processing and Networking (WiSPNET)</i> , 2022, pp. 189–192.	SDG2 – Zero Hunger	Improves agricultural productivity and food sustainability using smart technologies
6.	Dr. M. Raghu Ram	D. Sharathchandra and M. R. Ram, "ML based interactive disease prediction	SDG3 – Good Health and	Addresses healthcare

		model," in <i>2022 IEEE Delhi Section Conference (DELCON)</i> , 2022, pp. 1-5.	Well-being	monitoring, diagnosis, or biomedical signal processing with clear societal health impact
7.	Sri B. Shashikanth	K. Srinivas, B. Shashikanth, M. Raghuram, and K. Venumadhav, "Journal of Advanced Zoology Animal Wearables and the Transformation of Movement Ecology Through IoT", [Online]. Available: https://jazindia.com	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
8.	Sri B. Shashikanth	K. V. Vardhan Reddy, B. Shashikanth, G. Harshini, D. Zaki and B. Tharun, "A Novel IoT Based Smart Parking Solution," <i>2023 14th International Conference on Computing Communication and Networking Technologies (ICCCNT)</i> , Delhi, India, 2023, pp. 1-5, doi: 10.1109/ICCCNT56998.2023.10306833.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
9.	Dr. B. Jeevan	B. Jeevan and K. Sivani, "A new 18nm FinFET-based Programmable Logic Array type Multiplexer for High-speed and Low-Power applications," in <i>2023 IEEE 20th India Council International Conference, INDICON 2023</i> , Institute of Electrical and Electronics Engineers Inc., 2023, pp. 1205-1210. doi: 10.1109/INDICON59947.2023.10440683	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
10.	Dr. K. Srinivas	K. Srinivas, B. Shashikanth, M. Raghuram, and K. Venumadhav, "Journal of Advanced Zoology Animal Wearables and the Transformation of Movement Ecology Through IoT", [Online]. Available: https://jazindia.com	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure

CAYm2 2022-23 (As per NBA)

S.No	Name of the Faculty	Title of the Paper	SDGs addressed	SDG Justification
1.	Dr. K. Sivani	B. Jeevan, K. Bikshalu, E. Hari krishna, and K. Sivani, "Design of 2-1 Multiplexer based high-speed, Two-Stage 90 nm Carry Select Adder for fast arithmetic units," <i>Microprocess Microsyst</i> , vol. 99,	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and

		Jun. 2023, doi: 10.1016/j.micpro.2023.104846.		digital infrastructure
2.	Dr. K. Sivani	J. Battini and S. Kosaraju, "Design of efficient 22 nm, 20-FinFET full adder for low-power and high-speed arithmetic units," <i>Silicon</i> , vol. 15, no. 2, pp. 993–1002, Jan. 2023, doi: 10.1007/s12633-022-02073-z.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
3.	Dr. K. Sivani	B. Jeevan and K. Sivani, "A 16 nm FinFET circuit with triple function as digital multiplexer, active-high and active-low output decoder for high-performance SRAM architecture," <i>Semicond Sci Technol</i> , vol. 37, no. 8, Aug. 2022, doi: 10.1088/1361-6641/ac77ae.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
4.	Dr. K. Sivani	J. Battini, K. Bikshalu, and S. Kosaraju, "A 90 nm area and power efficient Carry Select Adder using 2-1 multiplexer based Excess-1 block," <i>Engineering Research Express</i> , Mar. 2023, doi: 10.1088/2631-8695/acc514	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
5.	Dr. K. Sivani	E. H. Krishna, K. Sivani, and K. A. Reddy, "OFDM Channel Estimation Along with Denoising Approach under Small SNR Environment using SSA," <i>Journal of Communications Software and Systems</i> , vol. 18, no. 1, pp. 28–35, 2022	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
6.	Dr. K. Sivani	B. Harish, M. S. S. Rukmini, and K. Sivani, "Design of MAC unit for digital filters in signal processing and communication," <i>Int J Speech Technol</i> , vol. 25, no. 3, pp. 561–565, 2022.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
7.	Dr. K. Sivani	S. Khaliq and K. Sivani, "The role of EEG-based brain computer interface using machine learning techniques: a comparative study," in <i>2022 IEEE Industrial Electronics and Applications Conference (IEACon)</i> , 2022, pp. 128–133.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
8.	Dr. M. Raghu Ram	M. Divija and R. Ram, "IoT based smart irrigation module for smart cultivation," in <i>2022 International Conference on Wireless Communications Signal Processing and Networking (WiSPNET)</i> , 2022, pp. 189–192.	SDG2 – Zero Hunger	Improves agricultural productivity and food sustainability using smart technologies

9.	Dr. M. Raghu Ram	D. Sharathchandra and M. R. Ram, "ML based interactive disease prediction model," in <i>2022 IEEE Delhi Section Conference (DELCON)</i> , 2022, pp. 1-5.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
10.	Sri B. Shashikanth	N. K. Darwante, S. Kuntamalla, M. Kundu, B. Shashikanth, N. Sahu, and S. Yalavarthy, "Darwante/ A Novel Soft Computing Techniques for Intricate Data mining A Novel Soft Computing Techniques for Intricate Data mining," vol. 20, no. 10, pp. 4441-4454, 2022, doi: 10.14704/nq.2022.20.10.NQ55429	SDG8 – Decent Work & Economic Growth	Enhances workforce skills and economic productivity through engineering innovation
11.	Dr. B. Jeevan	B. Jeevan, K. Bikshalu, E. Hari krishna, and K. Sivani, "Design of 2-1 Multiplexer based high-speed, Two-Stage 90 nm Carry Select Adder for fast arithmetic units," <i>Microprocess Microsyst</i> , vol. 99, Jun. 2023, doi: 10.1016/j.micpro.2023.104846.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
12.	Dr. B. Jeevan	J. Battini and S. Kosaraju, "Design of efficient 22 nm, 20-FinFET full adder for low-power and high-speed arithmetic units," <i>Silicon</i> , vol. 15, no. 2, pp. 993-1002, Jan. 2023, doi: 10.1007/s12633-022-02073-z.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
13.	Dr. B. Jeevan	B. Jeevan and K. Sivani, "A 16 nm FinFET circuit with triple function as digital multiplexer, active-high and active-low output decoder for high-performance SRAM architecture," <i>Semicond Sci Technol</i> , vol. 37, no. 8, Aug. 2022, doi: 10.1088/1361-6641/ac77ae.	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
14.	Dr. B. Jeevan	J. Battini, K. Bikshalu, and S. Kosaraju, "A 90 nm area and power efficient Carry Select Adder using 2-1 multiplexer based Excess-1 block," <i>Engineering Research Express</i> , Mar. 2023, doi: 10.1088/2631-8695/acc514	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure (NBA/NIRF).
15.	Dr. K. Srinivas	N. K. Darwante, S. Kuntamalla, M. Kundu, B. Shashikanth, N. Sahu, and S. Yalavarthy, "Darwante/ A Novel Soft Computing Techniques for Intricate Data	SDG8 – Decent Work & Economic Growth	Enhances workforce skills and economic productivity through engineering

		mining A Novel Soft Computing Techniques for Intricate Data mining," vol. 20, no. 10, pp. 4441-4454, 2022, doi: 10.14704/nq.2022.20.10.NQ55429		innovation
16.	Dr. K. Srinivas	Rajaram Jathoth, K. Srinivas, "Heuristic and machine learning strategies for improved clustering and data aggregation in the internet of things" Neuroquantology, vol.20, iss.10, pages. 4414-4427.doi: 10.14704/nq.2022.20.10.NQ55427	SDG9 – Industry, Innovation & Infrastructure	Strengthens industry-oriented innovation in semiconductors, communication, and digital infrastructure
17.	Smt. B. Smitha	S. Sodagudi, S. Manda, B. Smitha, N. Chaitanya, M. A. Ahmed, and N. Deb, "EEG signal processing by feature extraction and classification based on biomedical deep learning architecture with wireless communication," <i>Optik (Stuttg)</i> , vol. 270, p. 170037, 2022	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
18.	Smt. B. Smitha	Smitha Bandi, V.B.S. Srilatha Indira Dutt, " Single-channel fetal ECG extraction method based on extended Kalman filtering with singular value decomposition algorithm," <i>softcomputing</i> , vol. 27, p. 9119-9129, 2023.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
19.	Smt. B. Smitha	B. Smitha and B. S. S. I. Dutt, "Orthogonal Wavelet Construction Method for Electrocardiographic Signal Denoising," in <i>2022 10th International Conference on Emerging Trends in Engineering and Technology-Signal and Information Processing (ICETET-SIP-22)</i> , 2022, pp. 1-6	SDG8 – Decent Work & Economic Growth	Enhances workforce skills and economic productivity through engineering innovation
20.	Smt. B. Smitha	B. Smitha, V. S. Kumar, and B. S. Dutt, "Fetal ECG extraction algorithm based on single-channel abdominal signals," in <i>AIP Conference Proceedings</i> , 2022.	SDG3 – Good Health and Well-being	Addresses healthcare monitoring, diagnosis, or biomedical signal processing with clear societal health impact
21.	Smt. B. Smitha	B. Smitha, V. S. Kumar, and B. S. Dutt, "Cognitive radio subcarrier power allocation based on artificial physical optimization," in <i>AIP Conference</i>	SDG8 – Decent Work & Economic Growth	Enhances workforce skills and economic productivity through engineering

		<i>Proceedings</i> , 2022.		innovation
--	--	----------------------------	--	------------