NEWSLETTER
ISSUE: 68

NOVEMBER
2023

Adi Shankara
INSTITUTE OF ENGINEERING AND TECHNOLOGY

GENESIS

IGNITING THOUGHTS

Department of Electronics and Communication Engineering

VISION >>>

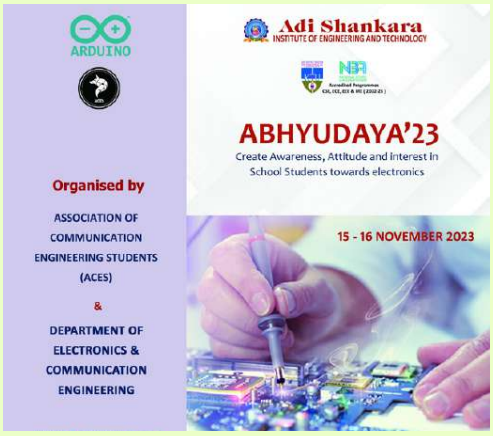
- To be recognized at the national and international level for excellence in Education and Research in Electronics and Communication Engineering.

<<< MISSION

- Inculcating leadership qualities, adaptability, and ethical values.
- Imparting quality education in the field of electronics, communication, and related areas to meet the challenges in the industry, academia, and research.
- Nurture the growth of each individual by providing a dynamic and conducive learning environment.

DEPT. OF ELECTRONICS & COMMUNICATION ENGINEERING
Till 30-06-2025
Rref F.No.26-56-2016-NBA
Dt: 26/08/2022
NBA NATIONAL BOARD OF ACCREDITATION

HIGHLIGHTS OF THIS EDITION



DEPARTMENTAL ACTIVITIES

ABHYUDAYA ' 23

School outreach programs are partnerships between schools and corporations, organizations, governmental agencies, or municipalities. These partnerships help bring the resources of the partnering entity into the classroom.

Abhyudaya'23 was a 2-day electronics workshop and orientation class for 10+2 students to create awareness, attitude and interest in school students towards electronics. It mainly focused on providing an exposure to the field of electronics and generate motivation and enthusiasm to learn more about this area.

The program covered a range of topics, including becoming familiar with TinkerCAD and constructing circuits using Arduino, gaining insight into the hardware of the Arduino UNO board and its IDE, and exploring the automation of circuits using Arduino.

The Objectives of the program was:

- To make the students aware about a technical/simulation tool which can be extensively used in the field of electronics.
- To prepare a student to stay competitive in a technologically advancing market.
- Opens up a whole new world of Electronics for the students which do imbibe a strong interest for the area in the career of the student.

The program was organized by the Association of Electronics and Communication Engineering Students (ACES) and Dept. of Electronics and Communication Engineering, ASIET. 70 students from various schools across the Ernakulam district actively took part in the workshop.

കാലടി ആദിശങ്കര എൻജിനീയറിങ് കോളജിൽ ഹയർ സെക്കൻഡറി വിദ്യാർഥികൾക്ക് ആരംഭിച്ച ഇലക്ട്രോണിക്സ് ശിൽപശാല പ്രിൻസിപ്പൽ ഡോ.എസ്.ശ്രീപ്രിയ ഉദ്ഘാടനം ചെയ്യുന്നു. വി.എം.മനീഷ്, എം.നീമ, ഡോ.അജയകുമാർ എന്നിവർ സമീപം.

ഇലക്ട്രോണിക്സ് ശിൽപശാല

കാലടി● ആദിശങ്കര എൻജിനീയറിങ് കോളജിൽ ഹയർ സെക്കൻഡറി വിദ്യാർഥികൾക്ക് ദ്വിദിന ഇലക്ട്രോണിക്സ് ശിൽപശാല ആരംഭിച്ചു. പ്രിൻസിപ്പൽ ഡോ.എസ്. ശ്രീപ്രിയ ഉദ്ഘാടനം ചെയ്തു. ഡോ.ജയകുമാർ, വി. എം.മനീഷ്, എം. നീമ എന്നിവർ പ്രസംഗിച്ചു.

കോളജിലെ ഇലക്ട്രോണിക്സ് ആൻഡ് കമ്യൂണിക്കേഷൻ എൻജിനീയറിങ് വകുപ്പും അസോസിയേഷൻ ഓഫ് കമ്യൂണിക്കേഷൻ എൻജിനീയറിങ് വിദ്യാർഥികളും ചേർന്നാണ് ശിൽപശാല സംഘടിപ്പിച്ചത്.

ജില്ലയിലെ വിവിധ സ്കൂളുകളിൽ നിന്ന് എഴുപതോളം വിദ്യാർഥികൾ പങ്കെടുക്കുന്നു. ഇന്ന് സമാപിക്കും.

ABHYUDAYA ' 23

FELICITATION OF SUYATI INTERNS

The certificate distribution ceremony of the previous group of students who successfully completed their internship at Suyati Technologies Pvt. Ltd. conducted on November 9, 2023, at 11:30 AM in the Main Seminar Hall. Distributed certificates to 16 students of various departments. Deligates from Suyati including Mr. Vinod Kumar, Head of Administration, Suyati, Principal Dr. S Sreepriya, Prof.R Rajaram & Dr. Bipin P. R were also present.

INTERACTION WITH Dr. T R G NAIR

On November 2, 2023, our academic luminaries engaged in a brief yet impactful session with the college advisor and venerable Prof. TRG Nair. With over 30 years of groundbreaking contributions, including 250 research papers and pioneering products, Prof. Nair, a distinguished Scientist and Professor, shared insights that resonated deeply. This encounter was a rare privilege, offering a concise yet enriching experience for our scholarly community.

SEMINAR ON “ENGINEERING ON A GLOBAL STAGE: DISCOVERING ABROAD OPPORTUNITIES”

Adi Shankara Institute of Engineering and Technology organized a seminar, "Engineering on a Global Stage," on November 4th, 2023. The event, hosted by the Department of Electronics and Communication, featured sessions led by Harpal Kaur, Branch Manager at Edwise Overseas Education Consultants. In collaboration with the Institution of Engineers (IEI) Student Chapter at ASIET, the seminar provided insights into international opportunities in engineering. Edwise Overseas Education Consultants, the presenting partner, actively supported the event, offering students guidance on pursuing higher education abroad. The sessions emphasized global career prospects, enhancing students' understanding of the broader landscape in engineering.

Speaker: Harpal Kaur

Branch Manager,
Edwise Overseas Education Consultants

Session by Mrs. Harpal Kaur

PLACEMENT TRAINING AND ADD-ON COURSES

The Work Readiness Training Program was conducted at ASIET, in collaboration with Skill Kendra sponsored by the Government of Kerala under the banner Additional Skill Acquisition Programme (ASAP). The sessions, held on November 9, 10, and 13, 2023, were tailored for final-year students to bolster their employability and soft skills. The sessions were not only informative but also incorporated gamified activities and team-building exercises, injecting an element of fun into the learning process.

One of the key strengths of the training was its motivational approach, inspiring students to recognize and harness their potential. The comprehensive curriculum covered essential topics such as resume building, interview skills, communication strategies, and workplace etiquette, providing students with a well-rounded preparation for the professional world.

SHARING HAPPINESS OF SUCCESS

INTERNSHIP AT SUYATI

Congratulations to Sreyas Kumar C V of S5 ECE B for getting selected for the internship program at Suyati Technologies.

Sreyas Kumar CV

KTU SECOND SEMESTER EXAMINATION TOPPERS

Congratulations

SHARING HAPPINESS OF SUCCESS

KTU FOURTH SEMESTER EXAMINATION TOPPERS

Congratulations

Champions of Glory!

Keerthana M
S1 ECE B

Anusree P
S1 ECE A

The finals of the KTU Women's Volleyball Team took place between Adi Shankara Institute of Engineering and Technology and Government Engineering College Barton Hill Trivandram at TKM Engineering college kollam. We are thrilled to announce that our team emerged as the champions, securing the coveted title of university champions and proudly lifted the victory cup. Congratulations to Swetha P Mallaya of S7 ECE B, Anusree P S1 ECE A and Keerthana M of S1 ECE B for their astounding victory!

Moreover, Anusree P and Keerthana M from S1 ECE, along with four other outstanding students from our college have secured spots on the prestigious KTU Women's Volleyball University Team! Kudos on this remarkable achievement!

SHARING HAPPINESS OF SUCCESS

NPTEL CERTIFICATIONS

AVIN SONY
S7 ECE A
VLSI Design Flow : RTL to GDS
IIIT Delhi

ASHIK PAUL
S7 ECE A
Industrial Safety Engineering
IIT Kharagpur

JAISON T POULOSE
S7 ECE A
VLSI Design Flow : RTL to GDS
IIIT Delhi

LIYA SAM
S7 ECE B
VLSI Design Flow : RTL to GDS
IIIT Delhi

SOORYA S PAI
S7 ECE B
VLSI Design Flow : RTL to GDS
IIIT Delhi

SEREEN SABU
S7 ECE B
Essential Mathematics for Machine Learning
IIT Roorkee

ALBINS PAUL
Assistant Professor
Digital Image Processing
IIIT Kharagpur

ANJU GEORGE
Assistant Professor
VLSI Design Flow : RTL to GDS
IIIT Delhi

STAFF ACHIEVEMENTS

- **Manesh V M**, Assistant Professor of Dept. of ECE filed a patent for “Artificial Intelligence-based Delivery Robotic Device” by the Intellectual Property Office, United Kingdom.

- **Reshma Lakshmanan,** Assistant Professor of ECE, published a research paper titled "Effective Antenna Design on Flexible Substrates" in the International Journal of Microwave and Optical Technology (Vol. 18, No. 6, November 2023).

- **Reshmi N C**, Associate Professor of Dept. of ECE attended a Faculty Development Program on Communication & Robotics System Modeling with MATLAB & SIMULINK and participated in the CoreEL Edu Summit.

- **Albins Paul**, Assistant Professor of Dept. of ECE - Got appreciation certificate for the mentorship during the ASIET-Suyati Industry Academia Program for the year 2022-23.
  - Attended a Workshop on Machine Learning with Tensor Flow.
  - Reviewer for the IEEE international conference RASSE 2023

- **Aswathy N**, Assistant Professor of Dept. of ECE led an insightful session on the 'Future of Electronics beyond CMOS' as the Resource Person at Albertian Institute of Science and Technology on November 21st, 2023.

- **Dr. Rahul Krishnan** served as the resource person for 5 days International level online workshop on “Smart Antennas - The Design Perspective using CST Studiosuite Software”, organised by Dept of ECE, SA Engineering College, Chennai

MILESTONE ACHIEVEVEMENT FOR ALUMNI GROUP

We're delighted to announce that our revered alumni group "AAKASHIEN" has officially gained status as a registered trust as of November 1st, 2023. This milestone is a testimony to the unwavering commitment of numerous individuals who have passionately worked behind the scenes to bring this to fruition. To these dedicated contributors, we extend our deepest gratitude.

Now, as a registered trust, AAKASHIEN will further enhance our continual efforts to nurture long-lasting relationships with our alumni, engaging them with more profound opportunities for growth, collaboration, and skill enhancement. We envision a forum where knowledge, experiences, and expertise can be freely exchanged, thereby adding value to our alumni's professional journey.

We look forward to a future brimming with possibilities and collaboration. More details of upcoming initiatives and programs will be shared in due time, and we encourage our alumni to stay connected. Thank you once again to everyone who has contributed to making AAKASHIEN a registered trust. Together, let's strive to make the ASIET alumni network a beacon of inspiration and unity.

The Rise of Edge Computing: Revolutionizing Data Processing

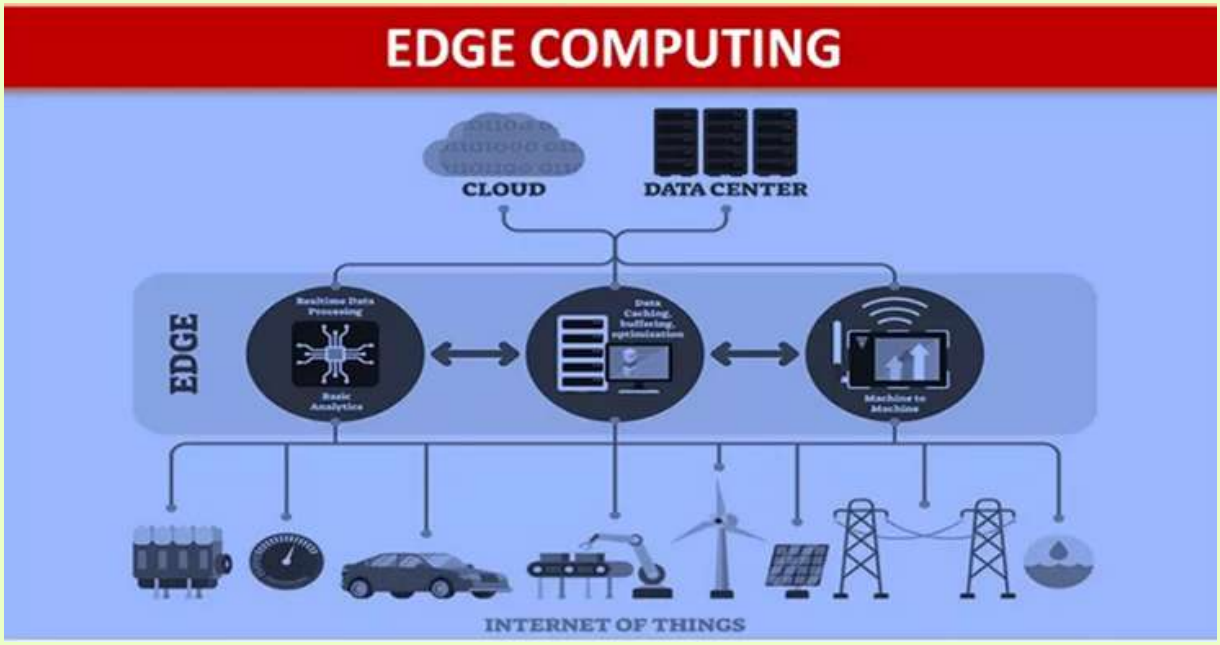
Dr. Ajay Kumar

Associate Professor
ECE Department

In the ever-evolving landscape of technology, a paradigm shift is underway—one that is reshaping the way we process and analyze data. Enter edge computing, a groundbreaking concept that is revolutionizing data processing and transforming the way businesses and industries harness the power of information.

Understanding Edge Computing: Breaking Free from Centralized Cloud Architectures

At its core, edge computing represents a departure from traditional centralized cloud architectures. Instead of relying solely on distant cloud servers for data processing and storage, edge computing brings the computation closer to the data source—often right at the "edge" of the network. This proximity minimizes latency, enhances performance, and opens the door to a myriad of applications across various sectors.



Real-World Applications: From Healthcare to Smart Cities

One of the defining features of edge computing is its versatility, making it applicable across diverse industries. In healthcare, for instance, edge computing facilitates real-time analysis of patient data at the point of care, enabling faster decision-making and more responsive medical interventions. Similarly, in manufacturing, edge computing optimizes processes by providing instant insights into equipment performance and production efficiency.

Smart cities leverage edge computing to enhance public services, from traffic management to waste disposal. By processing data locally, these cities can swiftly respond to changing conditions, improving overall urban efficiency and sustainability.

Advantages of Edge Computing: Speed, Efficiency, and Security

The benefits of edge computing are multifaceted. Reduced latency is a key advantage, as data doesn't need to traverse long distances to centralized servers. This results in quicker response times, crucial for applications demanding real-time processing, such as autonomous vehicles and augmented reality experiences. Furthermore, the efficiency gains are notable. Edge devices filter and process data locally, transmitting only relevant information to the cloud. This minimizes the volume of data that needs to be transferred and stored centrally, leading to more cost-effective and streamlined operations.

Security is another compelling aspect. With data processed closer to its source, the attack surface is reduced, making it harder for malicious actors to compromise sensitive information. This decentralized approach inherently bolsters cybersecurity, a critical concern in our increasingly interconnected world.

Key Technologies Driving Edge Computing: IoT and 5G Connectivity

Several key technologies play pivotal roles in driving the adoption of edge computing. The Internet of Things (IoT) is a linchpin, as the proliferation of connected devices generates vast amounts of data that can be processed at the edge. 5G connectivity further accelerates the potential of edge computing, providing the high-speed, low-latency network necessary for seamless data transmission and processing.

Looking Ahead: Future Trends and Considerations

As the momentum behind edge computing continues to build, we can anticipate several trends shaping its future. Edge AI, where artificial intelligence algorithms run locally on edge devices, will become more prevalent, enabling advanced data analysis without relying on centralized servers. The integration of edge computing with blockchain technology is also on the horizon, enhancing data security and transparency.

However, as with any technological shift, challenges must be addressed. Concerns around standardization, interoperability, and ensuring uniform security practices across diverse edge devices require careful consideration to unlock the full potential of edge computing.

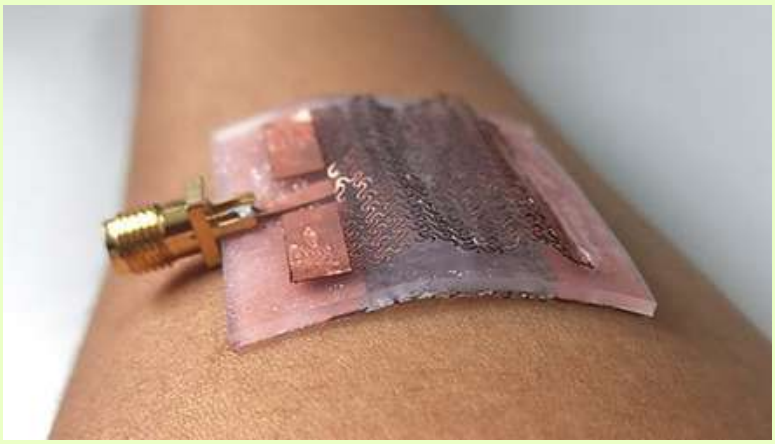
In conclusion, the rise of edge computing marks a significant milestone in the evolution of data processing. By bringing computation closer to the source, edge computing is empowering industries to unlock new levels of efficiency, speed, and security. As we navigate this transformative era, businesses and innovators alike must stay vigilant, embracing the opportunities that edge computing presents while proactively addressing its challenges. The future of data processing is undeniably at the edge, and the possibilities are boundless.

Revolutionizing Biomedical Technologies: The Role of Flexible Antennas

Mr Jaison T Poulose
S7 ECA

In the ever-evolving landscape of biomedical technologies, innovation continues to play a pivotal role in enhancing medical diagnostics, monitoring, and treatment modalities. One such groundbreaking advancement that has garnered significant attention is the integration of flexible antennas in various biomedical applications. Flexible antennas, characterized by their adaptability and versatility, have emerged as a transformative element in the quest for more efficient and patient-friendly healthcare solutions.

Flexible Antennas in Wearable Medical Devices:

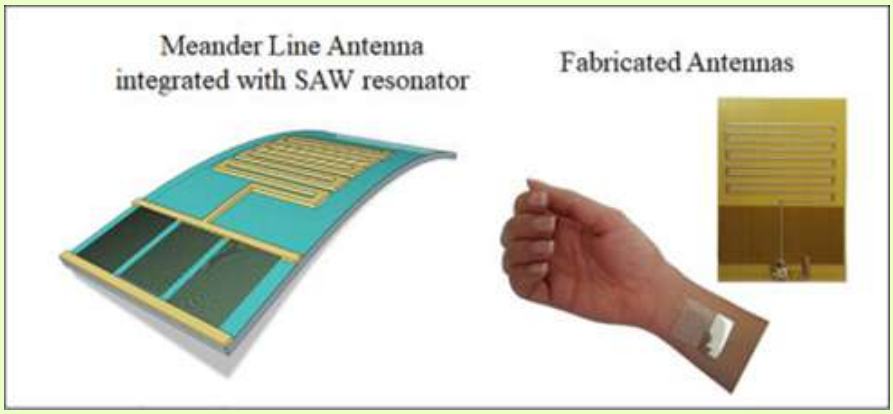


The utilization of flexible antennas has been particularly prominent in the development of wearable medical devices. These antennas, often integrated seamlessly into fabrics or wearable patches, enable continuous monitoring of vital signs and other health parameters. The flexibility of these antennas ensures comfort for the wearer, facilitating long-term and unobtrusive monitoring.

These wearable devices equipped with flexible antennas have the potential to revolutionize patient care by providing real-time data on crucial health metrics. From monitoring heart rate and respiratory patterns to tracking glucose levels in diabetic patients, the applications of flexible antennas in wearables are diverse and promising.

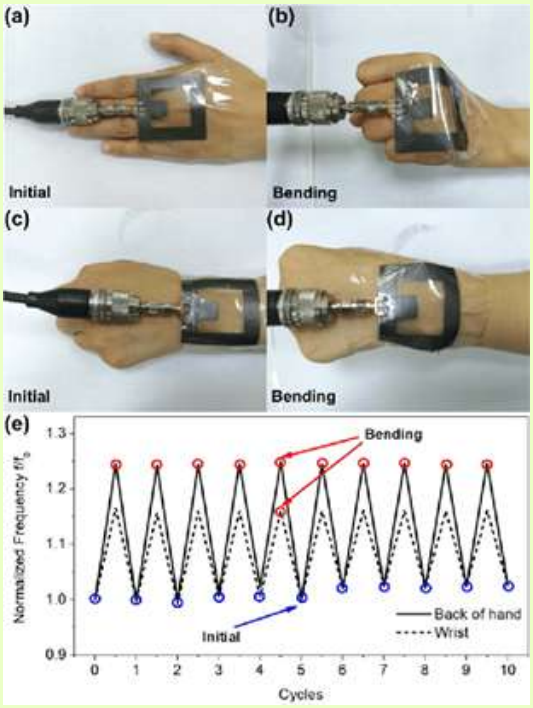
Wireless Communication in Implantable Devices:

In the realm of implantable medical devices, such as pacemakers and neurostimulators, the incorporation of flexible antennas has paved the way for wireless communication and data transmission. Traditional implantable devices often rely on rigid antennas, limiting their compatibility with the dynamic internal environment of the human body.



Flexible antennas, with their pliability, can conform to the irregular shapes within the body, allowing for improved integration and reduced risk of damage. This flexibility is crucial for enhancing the overall performance and reliability of implantable devices. Furthermore, the wireless communication capabilities provided by flexible antennas eliminate the need for physical connectors, reducing the risk of infection and improving the longevity of these life-saving devices.

Diagnostic Imaging and Flexible Antennas:



The field of diagnostic imaging has also witnessed the transformative impact of flexible antennas. In applications such as wireless capsule endoscopy, where a small capsule equipped with a camera is swallowed by a patient to capture images of the digestive tract, flexible antennas play a vital role in transmitting these images to an external receiver.

The flexibility of these antennas enables the capsule to navigate through the body's twists and turns, ensuring comprehensive imaging coverage. This non-invasive approach to diagnostic imaging, made possible by flexible antennas, offers an alternative to traditional procedures, reducing patient discomfort and enhancing diagnostic accuracy.

Challenges and Future Directions:

While the integration of flexible antennas in biomedical applications has shown immense promise, there are challenges that researchers and engineers continue to address. Factors such as power consumption, signal strength, and biocompatibility are critical considerations in the development of these technologies.

Looking ahead, ongoing research aims to optimize the design and performance of flexible antennas to meet the specific requirements of various biomedical applications. Collaborations between experts in materials science, electronics, and medicine are essential for overcoming challenges and unlocking the full potential of flexible antennas in healthcare.

Conclusion:

The integration of flexible antennas in biomedical applications marks a significant stride towards more patient-centric and efficient healthcare solutions. From wearables to implantable devices and diagnostic imaging, the adaptability and versatility of flexible antennas are transforming the landscape of medical technology. As researchers and engineers continue to innovate, the future holds great promise for the continued evolution of flexible antennas in advancing the frontiers of biomedical science and improving patient outcomes.

EDITORIAL BOARD

Dr. AJAY KUMAR
HEAD OF DEPARTMENT(HOD).

Ms NEETHA K
ASSISTANT PROFESSOR

Mr. MANESH V M
ASSISTANT PROFESSOR

Mr Jaison T Poulose
S7 ECA

Ms Titya Ramchandran
S7 ECB

Ms Sereen Sabu
S7 ECB

Ms Anit Sunil
S5 ECA

Mr Bahanam Varghese
S5 ECA

Mr Jeffin Paul
S5 ECB

Ms Christina Jisso
S3 ECA

Ms Meenakshl Sreekumar
S3 ECB

Department of ECE, ASIET
wishes you a very

MERRY CHRISTMAS AND A HAPPY NEW YEAR

Warm Christmas wishes and a Happy New Year to the vibrant ASIET family! May this season bring joy, unity, and inspiration. As we embrace the festivities, let's look forward to a year of shared successes, continuous growth, and the pursuit of excellence. Cheers to a wonderful holiday season!