

DESIGN OF PIFA ANTENNA FOR MEDICAL APPLICATIONS

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How to design a PIFA antenna? The PIFA antenna has a broad bandwidth capability, resonating from 950 MHz to 6 GHz. The proposed PIFA antenna is divided into three parts: the top, front, and back, resulting in a unique and effective antenna structure. The antenna is fabricated using a substrate made of FR4 material with a dielectric constant of 4.4.

What is the principle of PIFA antenna? Planar Inverted F Antenna (PIFA) is a linear Inverted F antenna (IFA). In order to increase the Bandwidth and resonating frequency, the radiator element is replaced by a plate. PIFA which has reduced backward radiation enhance antenna performance in terms of gain and minimizes the wave produced due to power absorption.

How antennas are used in medical applications? Most of the medical applications of antennas involve coupling electromagnetic energy into the human body or into other biological systems, such as animals used in experimental measurements. Primarily, these applications can be divided into two categories: therapy and diagnostics.

What is the difference between patch antenna and PIFA? PIFAs, like patch antennas, are inherently narrow banded. The difference is, with PIFAs the bandwidth can be widened, using different methods, such as slots in the plate and parasitic GND elements. Also, the size of the top plate can be changed by these methods, and thus smaller antennas can be created.

What is the gain of a PIFA antenna? Hence, the impedance bandwidth of PIFA is 15.1 %. The maximum gain achieved from simulating the designed antenna structure

is 3.53 dBi at resonant frequency 1.855 GHz, respectively, as shown in the Fig.

What is the frequency range of PIFA antenna? The PIFA covers a bandwidth of 31.9MHz (0.88-0.911GHz) and 112.7MHz (1.873-1.985GHz) and lower and higher bands with directivity of 2.55dB and 4.88dB at lower and higher resonating frequencies 0.89GHz and 1.93GHz respectively.

What are the advantages of PIFA antenna? The Advantages of Planar Inverted F Antennas (PIFA) This top plate can be modified to change the size of the antenna, which makes it possible to create smaller antennas. The antenna is positioned parallel to the PCB and requires limited space, making it an ideal choice for compact devices.

What is the difference between dipole and PIFA antennas? Overall, dipole antennas are larger, omnidirectional, and require a separate ground plane, while PIFAs are smaller, more directional, and do not require a separate ground plane. The choice between the two depends on the specific requirements of the wireless communication system and the form factor of the device.

What is the antenna rule? The "Antenna Rules" deal with process induced gate oxide damage caused when exposed polysilicon and metal structures, connected to a thin oxide transistor, collect charge from the processing environment (e.g., reactive ion etch) and develop potentials sufficiently large to cause Fowler Nordheim current to flow through ...

What is a wearable antenna for medical applications? These antennas are integrated into wearable devices, allowing for the transmission and reception of vital health data, such as heart rate, body temperature, and blood pressure, to medical professionals or monitoring systems in real time.

How should antennas be placed? The location for the antenna installation should be chosen based on the best unobstructed view of the intended coverage area. This means that the antenna should be at least 12 inches away from any parapet, wall, or obstruction and the ground plane should be 5 to 10 feet above the roofline.

What are the applications of antenna design? Antennas are virtually everywhere. From commercial applications such as smartphones, RFID tags, and wireless

printers, to defense applications such as phased array antennas for aircraft radar systems or autonomous vehicles, to integrated ground-based communication systems.

How do pifa antennas work? A planar inverted-F antenna is made up of a radiating plate that sits above a ground plane via a feeding point and short circuit pin. Traditionally, a PIFA is a ground-plane dependent antenna (unlike a dipole antenna which is ground-plane independent). Both its gain pattern and tuning rely on the ground plane.

Which of the following is a primary application of pifa in modern devices? A planar inverted-F antenna (PIFA) is used for wireless circuitry implemented in microstrip. The microstrip format is the format of choice for modern RF electronics.

What are the disadvantages of patch antenna? However, patch antennas also have some disadvantages. These include low efficiency, high quality factor, and a narrow bandwidth. To overcome these limitations, researchers have proposed various techniques such as using parasitic elements, different feeding types, and reconfigurable designs.

What is the polarization of PIFA antenna? The antenna operates at 2.35 GHz with 107 MHz bandwidth of Return Loss less than -14 dB. Results show that the antenna has circular polarization properties with 1.21 dB axial ratio and unidirectional radiation pattern.

What is the full form of PIFA? Premier India Football Academy. "To be the best, train with the best" Pifa Update.

What is the full form of PIFA direction? In this paper, a conformal Planar Inverted-F Antenna (PIFA) for mounting on such a cylinder is presented. The PIFA configuration is low cost and easily fabricated.

What is a significant advantage of using pifa in mobile devices? In short, a PIFA is smaller and easier to feed than a dipole. For a given frequency, a dipole has a length around one-half wavelength, whereas the PIFA has a length about one-quarter wavelength. So the PIFA is roughly half the size of the dipole.

What is the optimal antenna length for frequency? A rule of thumb is that for optimal transmission the antenna should be half the wavelength of the frequency ($\lambda/2$), and at the feed point this length should be divided by 2 so each side should measure ($\lambda/4$).

What is the design of planar inverted-F antenna? The antenna consists of a rectangular planar element located above the Flame Retardant 4 (FR4) dielectric substrate. The ground plane is on the bottom side of the substrate. Total dimension of PIFA is 21.72 mm x 18.5 mm x 4mm and has been optimized to cover the LTE Band 7 application at 2600 MHz frequency.

How to design an antenna?

How to design a balun for an antenna? This is a balun created by winding two separate wires around a magnetic core (the same as any transformer), and grounding one side of the primary winding. This creates an unbalanced condition on the primary side, and a balanced condition on the secondary side.

How to design antenna matching network?

How to design an antenna array? An antenna array requires multiple individual antennas, called elements, to work together as a unit. Designers configure this collection of antenna elements in such a way that the radiation pattern of each element combines with neighboring antennas to form an effective radiation pattern called the main lobe.

What is the main message in Eleven? Author's Message (theme) is that, as we move forward in life, we all carry the years that came before us. Even though we get older, we still have moments when the child within us comes out. There are times when life can be a struggle between remaining young and growing up.

What is the main conflict in the story Eleven by Sandra Cisneros? What is the main conflict in "Eleven" by Sandra Cisneros? The main conflict is Rachel's teacher insisting an abandoned sweater belongs to her, even when Rachel says it does not. The teacher forces Rachel to put the sweater on, and she cries in front of her class.

What does the number 11 refer to in Sandra Cisneros story 11? "Eleven" is titled as it is about a Latina girl named Rachel and is about her experience at school on her eleventh birthday. The story begins with Rachel's reflection to her new age; therefore, she is the main character and protagonist –the character that the story revolves around her.

What are the important quotes from Eleven by Sandra Cisneros? "Because the way you grow old is kind of like an onion or like the rings inside a tree trunk or like my little wooden dolls that fit one inside the other, each year inside the next one. That's how being eleven years old is."

Why is the of eleven so important for the poet? Explanation: Age eleven is so important for the poet because at this age he would be able to mark the difference between what is a fact and what is a fiction. At the age of eleven, the poet realizes that his childhood has gone. He has become much rational at this stage of his life.

What is the role of the main character in Eleven? Rachel. The main character and narrator. The story takes place on her eleventh birthday, and her narrative is comprised of her many thoughts about growing up, as exemplified in the incident with the sweater when Mrs. Price forces her to claim even though it doesn't belong to her.

What motivates Rachel to feel the way she does about turning 11? Despite how perceptive and thoughtful Rachel is, she still lacks the life experience necessary to handle tough situations, which she explains by her wish to be "one hundred and two instead of eleven." Because she believes people are comprised of all the ages they've ever been, she wants to have the experience of ...

Who is the antagonist in the story eleven? Mrs. Price is the story's main antagonist. She is seen only through Rachel's eyes, but appears dismissive towards Rachel, and seems to harbor a distinct lack of empathy for her.

What is the solution in the story Eleven? The story concludes without a clear-cut solution, mimicking the complexities of real-life situations and the inner world of a child facing embarrassment and frustration on her birthday. The turning point or climax occurs when Rachel is forced to take the sweater and put it on, despite her

internal protests.

Why does Mrs. Price give Rachel the sweater? She is using her position of authority in her classroom to bully Rachel into taking the sweater, and seems to feel justified in doing so. “That stupid Phyllis Lopez... says she remembers the red sweater is hers. I take it off right away and give it to her, only Mrs.

What literary devices are used in the story Eleven by Sandra Cisneros? Cisneros uses various forms of figurative language throughout “Eleven”, such as repetition, metaphors and similes, and symbolism.

What is the book Eleven about? Alex Douglas always wanted to be a hero. But nothing heroic ever happened to Alex. Nothing, that is, until his eleventh birthday. When Alex rescues a stray dog as a birthday gift to himself, he doesn't think his life can get much better.

What is the moral of Eleven by Sandra Cisneros? “Eleven” by Sandra Cisneros is one of those stories that every person should read at some point in his or her life. It's a simple story that so accurately captures a complex series of emotions – turning older, discovering that life is not always unfair, holding in your emotions.

What is the irony in eleven? Bildungsroman: this is a “coming of age” story about Rachel's gradual process of growing up. Dramatic irony: we know the sweater isn't hers, but neither we nor Rachel can express that to the teacher. Man vs. Self conflict: Rachel is battling her own immaturity, even wishing she were older.

What does Mrs Price symbolize in Eleven? Mrs. Price, on the other hand, appears wholly incapable of remembering the way she felt when she was eleven, or any other age when she was a child. Her inability to consider how her actions may affect Rachel or the other students in her class represents a failure of her imagination and self-reflection.

What is the message of the book Station Eleven? Station Eleven shows how, in the face of peril and struggles, many people turn to faith. In the novel, Mandel portrays faith as offering many of the same values of art: it provides purpose and community, and injects continuity and permanence into a terrifying, changing world.

What is the main point of Station Eleven? In an event called “the collapse,” a deadly flu epidemic sweeps the globe and kills most of the world's population. The plot of Station Eleven revolves around a few main characters and offers glimpses into their lives both before the collapse and during the nineteen years that follow.

What is the main theme in Station Eleven? While many might understandably steer clear of a topic so close to our current lived experience, Station Eleven—with central themes of loss, home, human connection, found family, and the power of art—is thoughtful, heartfelt, and ultimately hopeful as it prompts us to contemplate not just how to survive, but why.

What is the purpose of Eleven in Stranger things? At birth, Eleven was taken away from her mother by Dr. Martin Brenner and was raised as a test subject at Hawkins National Laboratory in order to develop her psychokinetic skills. When placed in a sensory deprivation tank, she can use remote viewing to access other dimensions, primarily for the purposes of espionage.

Why was Córdoba called the ornament of the world? Description. The Islamic empire of al-Andalus was known in its time as “the ornament of the world.” In particular, its capital city, Córdoba, was widely noted for its cosmopolitan culture, diverse population, and artistic achievements.

Who said "Ornament of the World"? Ostensibly the book is about Al-Andalus, Muslim Spain—from 711 to 1492—and specifically about the culture of tolerance that flourished during this period. Menocal takes her title from a remark of Hroswitha, the German canoness, who called Córdoba the “Ornament of the World” after meeting with an ambassador.

What is meant by the ornament of the world? The Ornament of the World tells the story of a remarkable time in history when the Muslims, Christians and Jews forged a common cultural identity that frequently transcended their religious differences.

What happened to the Jews and Muslims in Spain? In late medieval Spain, Jews and Muslims both endured forced conversion and exile. In fact, the edict of 1492 later served as a model for regional charters expelling converted Muslims.

Who created the ornament? Hans Greiner started making glass ball ornaments (called baubles) during the 1800s, which became the first manufactured Christmas ornaments. In the late 19th century, the enterprising F.W. Woolworth brought the idea to America, where he sold more than \$25 million worth per year.

What is the meaning of ornaments in Christianity? In the Bible, jewellery or ornaments served several purposes. Some few I want to mention include: i) Its use as currency or a medium of exchange (Genesis 24:22 ; Exodus 30:13-16 ; Numbers 31:50 ; Matthew 10:9). ii) Its use as freewill offerings (Exodus 30:11-16 ; Matthew 2:11).

Where did the ornament come from? Like the Christmas tree, Christmas ornaments originated in Germany. Hans Greiner began to make glass Christmas ornaments called baubles during the 1800s. These were the first manufactured Christmas ornaments, and they were a huge commercial success.

What is the meaning of ornament in Islam? Ornament in the Islamic work is used to convey the essence of an identifiable message or specific messages themselves. The richly textured geometric forms in the Alhambra function as a passageway, an essence, for viewers to meditate on life and afterlife.

What is the explanation of ornament? An ornament is a decoration. You can also ornament something by making it more beautiful or festive. The most common use of ornament is probably in Christmas ornaments, which decorate a tree. Similarly, any ornament makes something prettier, flashier, or more festive.

What was the ornament used for? In architecture and decorative art, ornament is decoration used to embellish parts of a building or object.

How were Christians treated in Spain? Oppression in later Islamic Spain Christians were not allowed taller houses than Muslims, could not employ Muslim servants, and had to give way to Muslims on the street. Christians could not display any sign of their faith outside, not even carrying a Bible. There were persecutions and executions.

How did the Muslims affect Spain? Moreover, the Muslim conquest brought advantages to many elements of society: the burden of taxes was generally less

onerous than it had been in the last years of the Visigoth epoch; serfs who converted to Islam (maw?l?; singular: mawl?) advanced into the category of freedmen and enrolled among the dependents of some ...

What is your impression of the interactions of Christians, Jews, and Muslims in medieval Spain? Despite frequent hostilities, even catastrophes, the interactions of Spanish Jews, Christians, and Muslims produced a flowering of science, theology, and literature in an often remarkably tolerant climate.

What is the theory of ornament? As a material bearer of ritual, social or cultural significations, ornament endows the objects with the necessary investiture to perform efficiently the function assigned to them within an already established system of order. The world can exist without ornament, but cannot function properly.

What is the purpose of ornaments? Indeed, a primary role of ornamentation is to beautify objects or processes, to contribute to their aesthetics. As noted from before, most definitions of ornaments emphasise artistic qualities and visual delight (Brett, 2005; Trilling, 2003).

What is the origin of the ornament? Ornaments today are associated with Christmas but the tradition of decorating evergreen trees started in 16th century Germany. Trees were first thought to be trimmed with real apples to represent the tree of forbidden fruit in the Bible and to celebrate the Winter Solstice.

What does ornament mean in history? Introduction. In this article ornament is defined as a decorative feature of objects and buildings, whereas decoration is used in the sense of the deployment of such forms, features, or shapes.

What does it mean to be an ornament to society? a person or thing that adds to the credit or glory of a society, era, etc.

What is made from ornaments and why? Ornaments are made of metals like gold, silver, platinum because of their lustrous and non-corrosive nature. We can further explain: Metal: Because the metals used in jewellery are always chosen on the basis of their reactivity, platinum, gold, and silver are utilised to manufacture jewellery.

What does the word ornament mean in the Bible? In five of the seven cases where the word ornament is used, we find that it refers to using it as an item of

beauty, as in Proverbs 25:12: "As an earring of gold, and an ornament of fine gold, so is a wise reprove upon an obedient ear." The plural of ornament is used about 14 times in the Old Testament.

What does an ornament represent? A house ornament symbolizes family shelter and protection. A bird ornament reflects happiness and joy. A heart ornament means there's true love in the home. An angel ornament asks for God's guidance in the home.

Where did the meaning ornament come from? Etymology. From Middle English ornament, from Old French ornement, from Latin ornamentum ("equipment, apparatus, furniture, trappings, adornment, embellishment"), from ornare, present active infinitive of orno ("I equip, adorn").

The Responsible Company: Q&A with Patagonia Founder Yvon Chouinard

Q: What inspired you to write "The Responsible Company"?

A: I wanted to share the lessons I've learned over the past 50 years of running Patagonia, a company that has always tried to balance environmental responsibility with financial success. I believe that businesses have a responsibility to do more than just make money, and I wanted to offer practical advice on how to create a sustainable and profitable enterprise.

Q: What are some of the key principles of a responsible company?

A: A responsible company is one that operates in a way that is respectful of the environment, its employees, and the communities in which it does business. It is committed to creating products and services that are both sustainable and beneficial to society. It also recognizes that it has a responsibility to use its resources wisely and to give back to the world.

Q: What are some of the challenges that responsible companies face?

A: One of the biggest challenges is the pressure to maximize profits at all costs. This can lead to companies cutting corners on environmental and social responsibility. Another challenge is the need to constantly innovate and adapt to changing market conditions. Responsible companies must be able to find ways to grow sustainably

while staying true to their values.

Q: What are some of the benefits of becoming a responsible company?

A: There are many benefits to becoming a responsible company, including:

- Increased customer loyalty
- Increased employee morale and productivity
- Reduced operating costs
- Improved brand reputation
- Access to new markets

Q: What advice would you give to entrepreneurs who want to create a responsible company?

A: I would advise entrepreneurs to start with a clear mission and values. They should also focus on building a strong team of people who are passionate about their work. Finally, they need to be patient and persistent. Creating a responsible company takes time and effort, but it is worth it in the end.

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