

(12) PATENT APPLICATION PUBLICATION

(21) Application No. 202041034126 A

(19) INDIA

(22) Date of filing of Application : 09/08/2020

(43) Publication Date : 04/09/2020

(54) Title of the invention : DESIGN AND DEVELOPMENT OF PLANAR MICROSTRIP ANTENNA FOR WIRELESS SENSOR NETWORK COMMUNICATION

<p>(51) International classification : H01Q5/35</p> <p>(31) Priority Document No : NA</p> <p>(32) Priority Date : NA</p> <p>(33) Name of priority country : NA</p> <p>(86) International Application No : NA</p> <p>Filing Date : NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number : NA</p> <p>Filing Date : NA</p> <p>(62) Divisional to Application Number : NA</p> <p>Filing Date : NA</p>	<p>(71) Name of Applicant :</p> <p>1) K.S.CHAKRADHAR, SREE VIDYANIKETHAN ENGINEERING COLLEGE</p> <p>Address of Applicant : SREE VIDYANIKETHAN ENGINEERING COLLEGE CHITTOOR (DT), TIRUPATHI, Andhra Pradesh India 517102 Andhra Pradesh India</p> <p>2) Mr.G.B.S.R. Naidu, GMR INSTITUTE OF TECHNOLOGY</p> <p>3) Dr.VEERA MALLESWARA RAO, GITAM</p> <p>4) Dr.G.KARUNAKAR, GITAM</p> <p>5) G.VINUTNA UJWALA, PRAGATI ENGINEERING COLLEGE</p> <p>6) MANDRAKURITI BALAKRISHNA, Aditya Institute Of Technology And Management</p> <p>7) Dr.BONULA RAMARAO, Aditya Institute Of Technology And Management</p> <p>8) DASARI NATARAJ, PRAGATI ENGINEERING COLLEGE</p> <p>(72) Name of Inventor :</p> <p>1) K.S.CHAKRADHAR</p> <p>2) Mr.G.B.S.R. Naidu</p> <p>3) Dr.VEERA MALLESWARA RAO</p> <p>4) Dr.G.KARUNAKAR</p> <p>5) G.VINUTNA UJWALA</p> <p>6) MANDRAKURITI BALAKRISHNA</p> <p>7) Dr.BONULA RAMARAO</p> <p>8) DASARI NATARAJ</p>
--	---

(57) Abstract :

Wearable sensor applications have gained popularity in the current era due to implementation of planar micro-strip antennas. This invention incorporates wearable sensors such that they are able to monitor both physiological data as well as environmental data improving the communication and transmission of data via the sensor node through wireless network. In this invention, substrate material involves polystyrene, paper, cotton and plastic. Selection of material of the substrate is based on their flexibility for wearable purpose which is analyzed for implantable, flexibility and conformal nature. Designing of these micro-strip antennas can be done which is applicable for 2.4 GHz frequency range applications. For each of the substrate, characteristics of the antenna such as radiation pattern, bandwidth, gain, return loss is determined as the simulation of the designed antenna is done using Momentum solver of ADS software which are also verified through experiments.

No. of Pages : 14 No. of Claims : 6



Office of the Controller General of Patents, Designs & Trade Marks  
 Department of Industrial Policy & Promotion,  
 Ministry of Commerce & Industry,  
 Government of India

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

#### Application Details

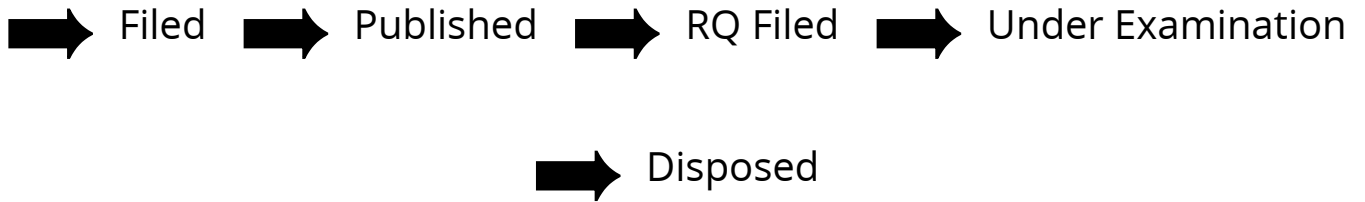
APPLICATION NUMBER	202041034126
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	09/08/2020
APPLICANT NAME	1 . K.S.CHAKRADHAR,SREE VIDYANIKETHAN ENGINEERING COLLEGE 2 . Mr.G.B.S.R. Naidu, GMR INSTITUTE OF TECHNOLOGY 3 . Dr.VEERA MALLESWARA RAO,GITAM 4 . Dr.G.KARUNAKAR, GITAM 5 . G.VINUTNA UJWALA, PRAGATI ENGINEERING COLLEGE 6 . MANDRAKURITI BALAKRISHNA,Aditya Institute Of Technology And Management 7 . Dr.BONULA RAMARAO, Aditya Institute Of Technology And Management 8 . DASARI NATARAJ,PRAGATI ENGINEERING COLLEGE
TITLE OF INVENTION	DESIGN AND DEVELOPMENT OF PLANAR MICROSTRIP ANTENNA FOR WIRELESS SENSOR NETWORK COMMUNICATION
FIELD OF INVENTION	BIO-MEDICAL ENGINEERING
E-MAIL (As Per Record)	patentefiling@gmail.com
ADDITIONAL-EMAIL (As Per Record)	
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	04/09/2020

#### Application Status

APPLICATION STATUS

## Awaiting Request for Examination

[View Documents](#)



In case of any discrepancy in status, kindly contact [ipo-helpdesk@nic.in](mailto:ipo-helpdesk@nic.in)



Office of the Controller General of Patents, Designs & Trade Marks  
 Department of Industrial Policy & Promotion,  
 Ministry of Commerce & Industry,  
 Government of India

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

Document Name	Created Date/Uploaded Date
202041034126-COMplete SPECIFICATION [09-08-2020(online)].pdf	09/08/2020
202041034126-DRAWINGS [09-08-2020(online)].pdf	09/08/2020
202041034126-FORM 1 [09-08-2020(online)].pdf	09/08/2020
202041034126-FORM-9 [09-08-2020(online)].pdf	09/08/2020
202041034126-POWER OF AUTHORITY [09-08-2020(online)].pdf	09/08/2020
202041034126-REQUEST FOR EARLY PUBLICATION(FORM-9) [09-08-2020(online)].pdf	09/08/2020

<b>FORM I</b> THE PATENTS ACT 1970 (39 of 1970) and THE PATENTS RULES, 2003 <b>APPLICATION FOR GRANT OF PATENT</b> (See section 7, 54 and 135 and sub-rule (1) of rule 20)				(FOR OFFICE USE ONLY)			
				Application No.			
				Filing date:			
				Amount of Fee paid:			
				CBR No:			
				Signature:			
<b>1. APPLICANTS REFERENCE/ IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)</b>							
<b>2. TYPE OF APPLICATION [Please tick ( ) at the appropriate category]</b>							
Ordinary (✓)		Convention ( )		PCT-NP ( )			
Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )	Divisional ( )	Patent of Addition ( )		
<b>3A. APPLICANT(S)</b>							
<b>Name in Full</b>		<b>Nationality</b>	<b>Country of Residence</b>	<b>Address of the Applicant</b>			
K.S.CHAKRADHAR Associate Professor		Indian	India	House No.	SREE VIDYANIKETHAN ENGINEERING COLLEGE		
				Street	CHITTOOR (DT),		
				City	TIRUPATHI,		
				State	Andra Pradesh		
				Country	India		
				Pin code	517102		
G.B.S.R. Naidu Sr. Assistant Professor		Indian	India	House No.	GMR INSTITUTE OF TECHNOLOGY		
				Street			
				City	RAJAM, SRIKAKULAM(DIST),		
				State	Andra Pradesh		
				Country	India		
				Pin code			
Dr.VEERA MALLESWARA RAO Professor		Indian	India	House No.	GITAM DEEMED TO BE UNIVERSITY		
				Street	Rushikonda,		
				City	VISAKHAPATNAM		
				State	Andhra Pradesh		
				Country	India		
				Pin code	530045		

Dr.G.KARUNAKAR Associate Professor	Indian	India	House No.	GITAM DEEMED TO BE UNIVERSITY
			Street	Rushikonda,
			City	VISAKHAPATNAM
			State	Andhra Pradesh
			Country	India
			Pin code	530045
G.VINUTNA UJWALA Assistant Professor	Indian	India	House No.	PRAGATI ENGINEERING COLLEGE
			Street	KAKINADA
			City	EAST GODAVARI (DT),
			State	Andhra Pradesh
			Country	India
			Pin code	533437
MANDRAKURITI BALAKRISHNA Sr. Assistant Professor	Indian	India	<b>House No.</b>	<b>Aditya Institute Of Technology And Management</b>
			Street	TEKKALI
			City	SRIKAKULAM(DIST
			State	Andhra Pradesh
			Country	India
			Pin code	
Dr.BONULA RAMARAO	Indian	India	<b>House No.</b>	<b>Aditya Institute Of Technology And Management</b>
			Street	TEKKALI
			City	SRIKAKULAM(DIST
			Stat	Andhra Pradesh
			Country	India
			Pin code	
			<b>House No.</b>	PRAGATI ENGINEERING COLLEGE
DASARI NATARAJ			Street	KAKINADA
			City	EAST GODAVARI (DT),
			Stat	Andhra Pradesh
			Country	India
			Pin code	533437

**3B. CATEGORY OF APPLICANT [Please tick ( ) at the appropriate category]**

Natural Person ( )	Other than Natural Person		
	Small Entity ( )	Startup ( )	Others ( )

**4. INVENTOR(S) [Please tick ( ) at the appropriate category]**

Are all the inventor(s) same as The applicant(s) named above?	Yes(✓)	No ()
--	--------	-------

**5. TITLE OF THE INVENTION: DESIGN AND DEVELOPMENT OF PLANAR MICROSTRIP ANTENNA FOR WIRELESS SENSOR NETWORK COMMUNICATION**

<b>6. AUTHORISED REGISTERED PATENT AGENT(S)</b>	IN/PANo.	
	Name	
	Mobile No	
<b>7. ADDRESS FOR SERVICE OF APPLICANT IN INDIA</b>	Name Postal Address	
	Telephone No.	
K.S.CHAKRADHAR Associate Professor SREE VIDYANIKETHAN ENGINEERING COLLEGE, TIRUPATHI, CHITTOOR (DT), A.P-517102	Mobile No.	8142404101
	Fax No.	
	emailid:patentefiling@gmail.com	

**8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION COUNTRY, PARTICULARS OF CONVENTION APPLICATION**

Country	Application Number	Filing date	Name of the applicant	Title of the invention	IPC (as classified in the Convention country)

**9. IN CASE OF PCT NATIONAL PHASE APPLICATION, PARTICULARS OF INTERNATIONAL APPLICATION FILED UNDER PATENT CO-OPERATION TREATY (PCT)**

International application number	International filing date
----------------------------------	---------------------------

**10. IN CASE OF DIVISIONAL APPLICATION FILED UNDER SECTION 16, PARTICULARS OF ORIGINAL(FIRST) APPLICATION**

Original (first) application No.	Date of filing of original (first) application
----------------------------------	--

**11. IN CASE OF PATENT OF ADDITION FILED UNDER SECTION 54, PARTICULARS OF MAIN APPLICATION OR PATENT**

Main application/patent No.	Date of filing of main application
-----------------------------	------------------------------------

**12. DECLARATIONS**

**(i) Declaration by the inventor(s)**

**(In case the applicant is an assignee:** the inventor(s) may sign here in below or the applicant may upload the assignment or enclose the assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period).

I/We, the above named inventor(s) is/are the true &first inventor(s) for this Invention and declare that the applicant(s) herein is/are my/ our assignee or legal representative.

(a) Date

(b) Signature(s)

(c) Name(s)

**(ii) Declaration by the applicant(s) in the convention country**

**(In case the applicant in India is different than the applicant in the convention country:** the applicant in the convention country may sign herein be low or applicant in India may upload the assignment from the applicant in the convention country or enclose the said assignment with this application for patent or send the assignment by post/electronic transmission duly authenticated within the prescribed period)

I/We, the applicant(s) in the convention country declare that the applicant(s) herein is/are my/our assignee or legal representative.

(a)Date

(b)Signature(s)

(c)Name(s) of the signatory

**(iii) Declaration by the applicant(s)**

I/We the applicant(s) hereby declare(s) that:-

I am/We are in possession of the above-mentioned invention.

The provisional/complete specification relating to the invention is filed with this application.

There is no lawful ground of objection(s) to the grant of the Patent to me/us.

I am/we are the true &first inventor(s).

I am/we are the assignee or legal representative of true &first inventor(s).

The application or each of the applications, particulars of which are given in Paragraph-8, was the first application in convention country/countries in respect of my/our invention(s).

I/We claim the priority from the above mentioned application(s) filed in convention country/countries and state that no application for protection in respect of the invention had been made in a convention country before that date by me/us or by any person from which I/We derive the title.

My/our application in India is based on international application under Patent Cooperation Treaty (PCT) as mentioned in Paragraph-9.

The application is divided out of my/our application particulars of which is given in Paragraph-10 and prays that this application may be treated as deemed to have been filed on DD/MM/YYYY under section 16 of the Act.

The said invention is an improvement in or modification of the invention particulars of which are given in Paragraph-11.



**13.FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION**  
**(a) Form2**



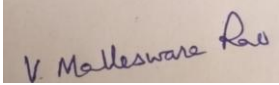
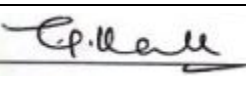
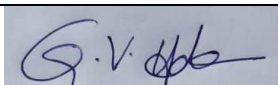
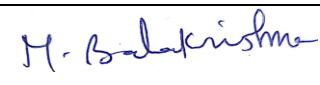

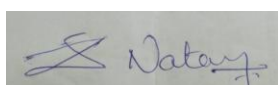
<b>Item</b>	<b>Details</b>	<b>Fee</b>	<b>Remarks</b>
Complete specification	No. of pages <b>pages 5</b>	-	-
No .of Claim(s)	No. of claims 4& No. of Page 1	-	-
Abstract	No. of page 1	-	-
No. of Drawing(s)	No. of drawings 3& No. of page3	-	-

#In case of a complete specification, if the applicant desires to adopt the drawings filed with his provisional specification as the drawings or part of the drawings for the complete specification under rule 13 (4), the number of such pages filed with the provisional specification are required to be mentioned here.

- (b) Complete specification (in conformation with the international application) / as amended before the International Preliminary Examination Authority (IPEA), as applicable (2copies).
- (c) Sequence listing in electronic form
- (d) Drawings (in conformation with the international application)/ as amended before the International Preliminary Examination Authority (IPEA), as applicable (2copies).
- (e) Priority document(s) or is quest to retrieve the priority document(s) from DAS (Digital Access Service) if the applicant had already requested the office of first filing to make the priority document(s) available to DAS.
- (f) Translation of priority document/Specification/International Search Report/ International Preliminary Report on Patent ability.
- (g) Statement and Undertaking on Form 3 (h) Declaration of Inventor ship on Form 5 (i) Power of Authority
- (j).....

**Total feeRs. in Cash Date .....**

I/We hereby declare that to the best of my/our knowledge, information and belief the fact and matters stated herein are correct and I/We request that a patent may be granted to me/us for the said invention.

		
K.S.CHAKRADHAR	G.B.S.R. Naidu	Dr.VEERA MALLESWARA RAO
		
Dr.G.KARUNAKAR	G.VINUTNA UJWALA	MANDRAKURITI BALAKRISHNA
		
Dr.BONULA RAMARAO	DASARI NATARAJ	

To,  
The Controller of Patents  
The Patent Office, at Chennai