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(21) Application No.202041046766 A

(19) INDIA

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(54) Title of the invention : QUANTIZED TAPERED FRACTAL RHOMBIC SUB-ARRAY ANTENNA

(51) International classification	:H04N 19/90	(71)Name of Applicant : 1)V. A. Sankar Ponnappalli Address of Applicant :Department of Electronics and Communication Engineering, Sreyas Institute of Engineering and Technology, Hyderabad-68, Telangana, India-500068. Telangana India
(31) Priority Document No	:NA	2)P. V. Y. Jayasree
(32) Priority Date	:NA	3)Praveena A
(33) Name of priority country	:NA	4)Vinod Kumar P
(86) International Application No	:NA	5)Naresh Kumar A
Filing Date	:NA	6)Aqeel Shaik
(87) International Publication No	: NA	7)Nitla Stanley Ebenezer
(61) Patent of Addition to Application Number	:NA	(72)Name of Inventor :
Filing Date	:NA	1)V. A. Sankar Ponnappalli
(62) Divisional to Application Number	:NA	2)P. V. Y. Jayasree
Filing Date	:NA	3)Praveena A
		4)Vinod Kumar P
		5)Naresh Kumar A
		6)Aqeel Shaik
		7)Nitla Stanley Ebenezer

(57) Abstract :

This work proposed a design of fractal rhombic array based on quantized tapering. This work related to the advanced antenna systems for celestial communications. In this work, second iterative level of sparse fractal array designed with quantized tapering technique. Actually nine antenna elements are exists in the second iterative level of rhombic fractal array and owing to the proposed quantized tapering, three elements in the rhombic fractal array become switched off out of nine elements. The rhombic fractal array according to the present invention is substantially smaller than its fully populated rhombic fractal array and maintaining balanced array factor behaviour. The proposed array is more suitable for celestial systems due to its less complex structure.

No. of Pages : 5 No. of Claims : 5



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Application Details

APPLICATION NUMBER	202041046766
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	27/10/2020
APPLICANT NAME	1 . V. A. Sankar Ponnappalli 2 . P. V. Y. Jayasree 3 . Praveena A 4 . Vinod Kumar P 5 . Naresh Kumar A 6 . Aqeel Shaik 7 . Nitla Stanley Ebenezer
TITLE OF INVENTION	QUANTIZED TAPERED FRACTAL RHOMBIC SUB-ARRAY ANTENNA
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	
ADDITIONAL-EMAIL (As Per Record)	vadityasankar3@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	13/11/2020

Application Status

APPLICATION STATUS	Awaiting Request for Examination
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➡ Filed ➡ Published ➡ RQ Filed ➡ Under Examination ➡ Disposed

In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

*Copy 1
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27/10/2020*



H 20766/38
(COURIER)

"FORM 1" THE PATENTS ACT 1970 (39 of 1970) and THE PATENTS RULES, 2003 APPLICATION FOR GRANT OF PATENT (See section 7, 54 and 135 and sub-rule (1) of rule 20)				(FOR OFFICE USE ONLY) D/ 93780	
Application No.		202041046766			
Filing date:		27/10/2020			
Amount of Fee paid:		1750/-			
CBR No:		36093			
Signature:		<i>[Signature]</i>			
1. APPLICANT'S REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE)					
2. TYPE OF APPLICATION [Please tick (✓) at the appropriate category]					
Ordinary (✓)		Convention ()		PCT-NP ()	
Divisional ()	Patent of Addition ()	Divisional ()	Patent of Addition ()	Divisional ()	Patent of Addition ()
3A. APPLICANT(S)					
Name in Full		Nationality	Country of Residence	Address of the Applicant	
V. A. Sankar Ponnappalli		INDIAN	INDIA	House No.	
				Street	Department of Electronics and Communication Engineering, Sreyas Institute of Engineering and Technology, Hyderabad-68
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				Country	INDIA
P. V. Y. Jayasree		INDIAN	INDIA	House No.	
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				City	Visakhapatnam-45
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			Country	INDIA
			Pincode	500068

Nitla Stanley Ebenezer	INDIAN	INDIA	House No.	
			Street	Dept. of Mechanical Engineering, Aditya College of Engineering and Technology,
			City	Surampalem,
			State	Andhra Pradesh
			Country	INDIA
			Pincode	533437

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

Natural Person (✓)	Other than Natural Person		
	Small Entity ()	Start up ()	Others ()

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

Are all the inventors Same as the applicant(s) named above (✓)	Yes (✓)	No ()
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If "No", furnish the details of the inventor(s)

Name in Full	Nationality	Country of Residence	Address of the Inventor	
Not Applicable	Not Applicable	Not Applicable	House No.	Not Applicable
			Street	Not Applicable
			City	Not Applicable
			State	Not Applicable
			Country	Not Applicable
			Pin code	Not Applicable

5. TITLE OF THE INVENTION

"Quantized Tapered Fractal Rhombic Sub-Array Antenna"

6. AUTHORISED REGISTERED PATENT AGENT(S) Not Applicable	IN/PA No.	Not Applicable
	Name	Not Applicable
	Mobile No.	Not Applicable

7. ADDRESS FOR SERVICE OF APPLICANT IN INDIA	Name	V. A. Sankar Ponnappalli
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	Telephone No.	
	Mobile No.	(+91) 8125550684
	Fax No.	
	E-mail ID	Vadityasankar3@gmail.com

8. IN CASE OF APPLICATION CLAIMING PRIORITY OF APPLICATION FILED IN CONVENTION

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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)
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

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
Not Applicable	Not Applicable

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
Not Applicable	Not Applicable

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
Not Applicable	Not Applicable

12. DECLARATIONS

(i) Declaration by the inventor(s)

(In case the applicant is an assignee: the inventor(s) may sign herein 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 Not Applicable

b) Signature(s) Not Applicable

c) Name(s) Not Applicable

(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 below or applicant in India may upload

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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 Not Applicable
 b) Signature(s) Not Applicable
 c) Name(s) Not Applicable

(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.
- The invention as disclosed in the specification uses the biological material from India and the necessary permission from the competent authority shall be submitted by me/us before the grant of patent to me/us.
- 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 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 convention country before that day 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 particulars of which is given in paragraph- 10 and pray that this application may treated as deemed to have been filed on DD/MM/YYYY under section 16 of the Act.
- The said invention is and improvement in or modification of the invention particulars of which are given in paragraph-11.

13. FOLLOWING ARE THE ATTACHMENTS WITH THE APPLICATION

(a) Form 2

Item	Details	Fee	Remarks
Complete/Provisional specification) #	No of pages 04	1750/-	
No of claim(s)	No. of claims 01		

	and No. of pages 01		
Abstract	No. of pages 01		
No. of Drawing(s)	No. of drawings 02 and No. of pages 01		

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 (2 copies).
- (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 (2 copies).
- (e) Priority document(s) or a request 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 Patentability.
- (g) Statement and Undertaking on Form 3
- (h) Declaration of Inventorship on Form 5
- (i) Power of Authority
- (j) Not Applicable.

Total fee ₹1750/- in ~~Cash/Banker's Cheque~~/Bank Draft bearing No.

Date

502484 20/10/2020

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.

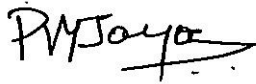
Dated this 01st day of September, 2020



Signature:

Name: V. A. Sankar Ponnappalli

Dated this 01st day of September, 2020



Signature:

Name: P. V. Y. Jayasree

Dated this 01st day of September, 2020



Signature:

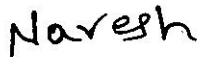
Name: Praveena A

Dated this 01st day of September, 2020

Signature:

Name: Vinod Kumar P

Dated this 01st day of September, 2020



Signature:

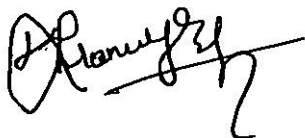
Name: Naresh Kumar A

Dated this 01st day of September, 2020

Signature:

Name: Shaik Aqeel

Dated this 01st day of September, 2020



Signature:

Name: Nitla Stanley Ebenezer

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

Note: -

- * Repeat boxes in case of more than one entry.
- * To be signed by the applicant(s) or by authorized registered patent agent otherwise where mentioned.
- * Tick (✓)/cross (x) whichever is applicable/not applicable in declaration in paragraph-12.
- * Name of the inventor and applicant should be given in full, family name in the beginning.
- * Strike out the portion which is/are not applicable.
- * For fee: See First Schedule";

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