

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

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	Application Details
APPLICATION NUMBER	202241033431
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	10/06/2022
APPLICANT NAME	 Dr M Parthasarathy Dr. Anand Kumar Gummadi Mr. Ganeshkumar P Dr L Malleswara Rao Mr.Thiru. B.Deepan Kumar Dr. A. Akila Dr.A.Ramu Dr. Harikumar Pallathadka Ms.P.S.Chandel Dr. Sachin Hemraj Dhawankar
TITLE OF INVENTION	Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew
FIELD OF INVENTION	PHYSICS
E-MAIL (As Per Record)	senanipindia@gmail.com
ADDITIONAL-EMAIL (As Per Record)	admin@senanip.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	
PUBLICATION DATE (U/S 11A)	17/06/2022

Application Status

Awaiting Request for Examination View Documents Filed Published RQ Filed Under Examination Disposed In case of any discrepancy in status, kindly contact ipo-helpdesk@nic.in

FORM 5 THE PATENTS ACT 1970

(39 of 1970)

&

The Patents rules, 2003 DECLARATION AS TO INVENTORSHIP

[See section 10(6) and rule 13(6)]

1. NAME: OF APPICANT (S)

- 1. Dr M Parthasarathy
- 2. Dr. Anand Kumar Gummadi
- 3. Mr. Ganeshkumar P
- 4. Dr L Malleswara Rao
- 5. Mr.Thiru. B.Deepan Kumar
- 6. Dr. A. Akila
- 7. Dr.A.Ramu
- 8. Dr. Harikumar Pallathadka
- 9. Ms.P.S.Chandel
- 10. Dr. Sachin Hemraj Dhawankar

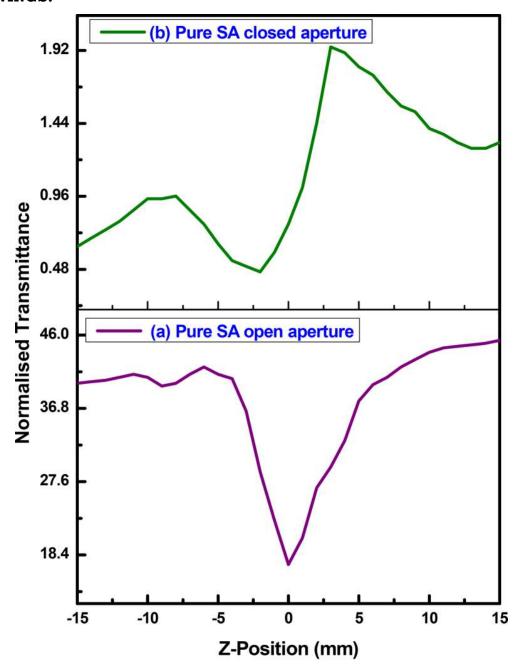
2. INVENTOR (S)

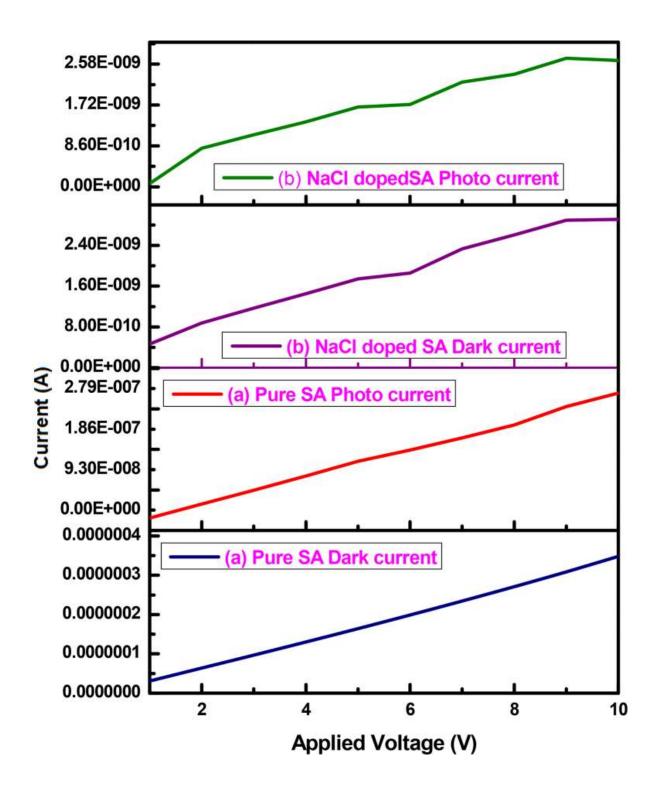
NAME	NATION-	ADDRESS
	ALITY	
		Associate Professor and Head of
		the Department of Physics Vels
		Institute of Science, Technology
		and Advanced Studies (Vels
Dr M Parthasarathy	Indian	University), Velan Nagar,
Di Wi i di didasaratiny	Indian Indian	Pallavaram,
		Chennai
		Pin: 600117
		State: Tamilnadu
	Indian	Country: India
		Senior Research Associate
		National Metallurgical Laboratory-
		CSIR
Dr. Anand Kumar Gummadi	Indian	Pin: 831011
		State: Jharkhand
		Country: India
		Assistant Professor in Chemistry
		SNS College of Engineering, SNS
N G 11 P	T 1:	Kalvi Nagar, Sathy Main Road,
Mr. Ganeshkumar P	Indian	Kurumbapalayam, PO, Coimbatore,
		Pin: 641107
	di Indian	State: Tamilnadu

		Country: India
Dr L Malleswara Rao	Indian	Associate Professor SRI Y N College (A), Narsapur Pin: 534 275 State: Andhra Pradesh Country: India
Mr.Thiru. B.Deepan Kumar	Indian	Regional officer Directorate of Technical Education, Guindy, Chennai Pin: 600025 State: Tamilnadu Country: India
Dr. A. Akila	Indian	Assistant Professor Sri Eshwar College of Engineering, kondampatti, Kinathukadavu, Coimbatore Pin:641202 State: Tamil Nadu Country: India
Dr.A.Ramu	Indian	Asst Professor of in Physics Ganesar college of arts and science Melaisivapuri Ponnamaravathy(tk) Pudukkottai(dt) Pin: 622 403 State: Tamilnadu Country: India
Dr. Harikumar Pallathadka	Indian	Director and Professor Manipur International University, Ghari, Imphal, Imphal West, Pin: 795140 State: Manipur Country: India
Ms.P.S.Chandel	Indian	Assistant Professor Chintamani College Of Arts & Science, Gondpipri, Distribution:Chandrapur, Pin: 442702 State: Maharashtra Country: India
Dr. Sachin Hemraj Dhawankar	Indian	Assistant Professor Shri JSPM Arts Comm and Science

		College, near HP petrol pump, Dhanora, Gadchiroli Pin:442606, State: Maharashtra Country: India
Date 10/06/2022		
		Dr M Parthasarathy (Applicant's Signature)
3. DECLARATION TO BE GIVEN	WHEN THE A	PPLICATION IN INDIA IS FILED
BY THE APPLICANT (S) IN THE -NA-	CONVENTION	COUNTRY:-
	•	y declare that our right to apply for ue and first inventor(s).
Dated thisday of, 2022.		
	J	ure:-NA
	Name: of signa	tory:- NA
To, The controller of patent The patent office, at Delhi/Mur	nbai/Chennai/Ko	olkata.

DRAWINGS:





(FOR OFFICE USE ONLY) FORM 1 **Application No:** THE PATENTS ACT 1970 **Filing Date:** (39 of 1970) **Amount of Fee Paid:** & **CBR No:** The Patents rules, 2003 Signature: APPLICATION FOR GRANT OF PATENT [See section 7, 54 & 135and rule 20 (1)] 1. APPLICANT'S REFERENCE / IDENTIFICATION NO. (AS ALLOTTED BY OFFICE) **2.** TYPE OF APPLICATION [Please tick ($\sqrt{ }$) at the appropriate category]

Ordinary $()$ Convention		Convention ()		PCT-NP()	
Divisional ()	Patent of	Divisional ()	Patent of	Divisional ()	Patent of
	Addition ()		Addition ()		Addition ()

3. (3A) APPLICANT

Name	Nationality	Country of	Address
		Residence	
Dr M Parthasarathy	Indian	India	Associate Professor and Head of the Department of Physics Vels Institute of Science, Technology and Advanced Studies (Vels University), Velan Nagar, Pallavaram, Chennai Pin: 600117 State: Tamilnadu Country: India
Dr. Anand Kumar Gummadi	Indian	India	Senior Research Associate National Metallurgical Laboratory- CSIR Pin: 831011 State: Jharkhand Country: India
Mr. Ganeshkumar P	Indian	India	Assistant Professor in Chemistry SNS College of Engineering, SNS Kalvi Nagar, Sathy Main Road, Kurumbapalayam, PO, Coimbatore, Pin: 641107 State: Tamilnadu Country: India
Dr L Malleswara Rao	Indian	India	Associate Professor SRI Y N College (A), Narsapur Pin: 534 275 State: Andhra Pradesh Country: India

Mr.Thiru. B.Deepan Kumar	Indian	India	Regional officer Directorate of Technical Education, Guindy, Chennai Pin: 600025 State: Tamilnadu Country: India
Dr. A. Akila	Indian	India	Assistant Professor Sri Eshwar College of Engineering, kondampatti, Kinathukadavu, Coimbatore Pin:641202 State: Tamil Nadu Country: India
Dr.A.Ramu	Indian	India	Asst Professor of in Physics Ganesar college of arts and science Melaisivapuri Ponnamaravathy(tk) Pudukkottai(dt) Pin: 622 403 State: Tamilnadu Country: India
Dr. Harikumar Pallathadka	Indian	India	Director and Professor Manipur International University, Ghari, Imphal, Imphal West, Pin: 795140 State: Manipur Country: India
Ms.P.S.Chandel	Indian	India	Assistant Professor Chintamani College Of Arts & Science, Gondpipri, Distribution:Chandrapur, Pin: 442702 State: Maharashtra Country: India
Dr. Sachin Hemraj Dhawankar	Indian	India	Assistant Professor Shri JSPM Arts Comm and Science College, near HP petrol pump, Dhanora, Gadchiroli Pin:442606, State: Maharashtra Country: India

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 tl	Are all the inventor(s) same as $Yes(\sqrt{\ })$				NO()			
the appli	the applicant(s) named above?							
If "No",	If "No", furnish the details of the inventor(s)							
								I
Name		Nationality	Country of		Add	ress		
			Residence					
5. T	ITLE OF TH	E INVENT	ION					
Dye	molecules cha	nged the sh	ape, color, to	exture, a	and electrical ch	arge of su	ulphamic	acid
			crystals	as they ş	grew			
6. A	UTHORISED I	REGISTERI	ED PATENT		IN/PA No.			
A	GENT(S)							
					Name			
					Mobile No.			
7. A	DDRESS FOI	R SERVICI	E OF APPLI	CANT	Telephone No.	NA		
II	N INDIA				Mobile No. +9	1- 877808	38182	
	International 1	_	House (SIPH)	,	E-mail: editorsi	ppublisher	@gmail.cor	n
Mannarg	udi, Tamilnadu	i, India.						
8 II	V CASE OF A	PPLICATI	ON CLAIM	ING PR	LIORITY OF AF	PLICAT	TION FIL	FD IN
					OF CONVENT			
		<u> </u>	· .					
Country	Application Number		Name of the		Title of the inventi		PC (as class he convent	
		date	applican	t		С	ountry)	
-NA-	-NA-	-NA-	-NA-		-NA-		-NA-	
9. IN CAS			APPLICATION, ATION TREATY		JLARS OF INTERNA	ATIONAL A	APPLICATIO	N FILED
	International application number			International filing date				
	-NA-				-NA-			
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
-NA-	-NA-

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
-NA-	-NA-

12. DECLARATIONS:

(i) **Declaration by 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: 10/06/2022

(b) Signature:

(c) Name:

M. Parthamat

Dr M Parthasarathy Dr. Anand Kumar Gummadi

P. hanshou

Mr. Ganeshkumar P

Dr L Malleswara Rao

Mr.Thiru. B.Deepan Kumar Dr. A. Akila

Dr.A.Ramu

Dr. Harikumar Pallathadka

Ms.P.S.Chandel

Dr. Sachin Hemraj Dhawankar

(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 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	e(s)					
(c) Name(s) of the signatory						
. ,	claration by the applica					
I/V	I/We, the applicant hereby declares that:-					
□ I am	I am /we are in prosession of the above-mentioned invention					
☐ The f	orovisional/ complete spec	eification relating to the inves	ntion is filed with this application.			
⊟—The ir	nvention as disclosed in the	specification uses the biologic	al material from India and the			
neces	sary permission from the c	ompetent authority shall be su	bmitted by me/us before the grant			
of pat	ent to me/us.					
☐ There	e is no lawful ground of o	bjection to the grant of the p	patent to me/us.			
□ Iam/	we are the true & first inve	ntor(s).				
□ Iam/	we are the assignee or lega	I representative of true & first	inventor(s).			
□ —The a	pplication or each of the ap	oplications, particulars of which	are given in Paragraph-8, was the			
first a	pplication in convention co	untry/countries in respect of n	ny/our invention(s).			
□ — I/We	claim the priority from the	above mentioned application(s) filed in convention			
count	ry/countries and state that	no application for protection i	n respect of the invention had been			
made	in a convention country be	efore that date by me/us or by	any person from which I/We derive			
the ti	t le.					
□ — My/o	ur application in India is ba	sed on international applicatio	n under Patent Cooperation Treaty			
(PCT)	as mentioned in Paragraph	- 9.				
⊟—The a	pplication is divided out of	my /our application particulars	of which is given in Paragraph-10			
and p	ray that this application ma	ay be treated as deemed to have	ve been filed on DD/MM/YYYY under			
sectio	n 16 of the Act.					
☐ The sa	aid invention is an improve	ment in or modification of the	invention particulars of which are			
given	given in Paragraph-11.					
(d) Follow	ing are the attachments	with the application:				
(a) Form 2						
Item	Detail	Fee	Remark			
Complete	No. of pages: 09	1,600				
specification						
No. of Claim(s)	No. of claims: 09					

No. of pages: 02

No. of pages: 01

Abstract

Drawings	No. of drawings: 02 No. of Pages: 02	
Priority	No. of Priorities:	

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.

- (a) Provisional specification (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies).
- (b) Sequence listing in electronic form
- (c) Drawings (in conformation with the international application)/as amended before the International Preliminary Examination Authority (IPEA), as applicable (2 copies).
- (d) 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.
- (e) Translation of priority document/Specification/International Search Report/International Preliminary Report on Patentability.
- (f) Statement and Undertaking on Form 3
- (g) Declaration of Inventorship on Form 5

Total fee Rs.	in Cash/ Banker's Chequ	e /Bank Draft bearing No	
date	on Bank		

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

Dated this 10th day of June, 2022

M. Parthamat

Dr M Parthasarathy (Applicant's Signature)

To,

The Controller of Patents

The Patent Office, At Delhi/Mumbai/Chennai/Kolkata, India.

FORM 9

THE PATENTS ACT, 1970 (39 of 1970)

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THE PATENTS RULES, 2003 **REQUEST FOR PUBLICATION**

(See section 11A (2); rule 24A)

We (state name, address and nationality of Applicant)

APPLICANTS (S)				
NAME	NATIONALITY	ADDRESS		
Dr M Parthasarathy	Indian	Associate Professor and Head of the Department of Physics Vels Institute of Science, Technology and Advanced Studies (Vels University), Velan Nagar, Pallavaram, Chennai Pin: 600117 State: Tamilnadu		
Dr. Anand Kumar Gummadi	Indian	Country: India Senior Research Associate National Metallurgical Laboratory- CSIR Pin: 831011 State: Jharkhand Country: India		
Mr. Ganeshkumar P	Indian	Assistant Professor in Chemistry SNS College of Engineering, SNS Kalvi Nagar, Sathy Main Road, Kurumbapalayam, PO, Coimbatore, Pin: 641107 State: Tamilnadu Country: India		
Dr L Malleswara Rao	Indian	Associate Professor SRI Y N College (A), Narsapur Pin: 534 275 State: Andhra Pradesh Country: India		
Mr.Thiru. B.Deepan Kumar	Indian	Regional officer		

		Directorate of Technical Education,	
		Guindy, Chennai	
		Pin: 600025	
		State: Tamilnadu	
		Country: India Assistant Professor	
		Sri Eshwar College of Engineering,	
Dr. A. Akila	Indian	kondampatti, Kinathukadavu, Coimbatore	
		Pin:641202	
		State: Tamil Nadu	
		Country: India	
		Asst Professor of in Physics	
		Ganesar college of arts and science	
		Melaisivapuri	
Dr.A.Ramu	Indian	Ponnamaravathy(tk)	
	Ilidiali	Pudukkottai(dt)	
		Pin: 622 403	
		State: Tamilnadu	
		Country: India	
	adlea T 1	Director and Professor	
		Manipur International University, Ghari,	
Dr. Harikumar Pallathadka		Imphal, Imphal West,	
Di. Harikumar i anamauka	Indian	Pin: 795140	
		State: Manipur	
		Country: India	
		Assistant Professor	
		Chintamani College Of Arts & Science,	
		Gondpipri,	
Ms.P.S.Chandel	Indian	Distribution:Chandrapur,	
		Pin: 442702	
		State: Maharashtra	
		Country: India	
		Assistant Professor	
		Shri JSPM Arts Comm and Science	
Dr. Cashin Harry:		College, near HP petrol pump, Dhanora,	
Dr. Sachin Hemraj	Indian	Gadchiroli	
Dhawankar	maian	Pin:442606,	
		State: Maharashtra	
		Country: India	

Hereby request f	for early	publication	of my	application	numbered	2022	dated	
under section 11A	A (2) of t	the act.						

Date 10/06/2022

M. Parthamat

Dr M Parthasarathy (Applicant's Signature)

To
The Controller of patents,
The Patent office at Delhi/Mumbai/Chennai/Kolkata

FORM 9

THE PATENTS ACT, 1970 (39 of 1970)

&

THE PATENTS RULES, 2003 **REQUEST FOR PUBLICATION**

(See section 11A (2); rule 24A)

We (state name, address and nationality of Applicant)

APPLICANTS (S)				
NAME	NATIONALITY	ADDRESS		
Dr M Parthasarathy	Indian	Associate Professor and Head of the Department of Physics Vels Institute of Science, Technology and Advanced Studies (Vels University), Velan Nagar, Pallavaram, Chennai Pin: 600117 State: Tamilnadu		
Dr. Anand Kumar Gummadi	Indian	Country: India Senior Research Associate National Metallurgical Laboratory- CSIR Pin: 831011 State: Jharkhand Country: India		
Mr. Ganeshkumar P	Indian	Assistant Professor in Chemistry SNS College of Engineering, SNS Kalvi Nagar, Sathy Main Road, Kurumbapalayam, PO, Coimbatore, Pin: 641107 State: Tamilnadu Country: India		
Dr L Malleswara Rao	Indian	Associate Professor SRI Y N College (A), Narsapur Pin: 534 275 State: Andhra Pradesh Country: India		
Mr.Thiru. B.Deepan Kumar	Indian	Regional officer		

		Directorate of Technical Education,	
		Guindy, Chennai	
		Pin: 600025	
		State: Tamilnadu	
		Country: India Assistant Professor	
		Sri Eshwar College of Engineering,	
Dr. A. Akila	Indian	kondampatti, Kinathukadavu, Coimbatore	
		Pin:641202	
		State: Tamil Nadu	
		Country: India	
		Asst Professor of in Physics	
		Ganesar college of arts and science	
		Melaisivapuri	
Dr.A.Ramu	Indian	Ponnamaravathy(tk)	
	Ilidiali	Pudukkottai(dt)	
		Pin: 622 403	
		State: Tamilnadu	
		Country: India	
	adlea T 1	Director and Professor	
		Manipur International University, Ghari,	
Dr. Harikumar Pallathadka		Imphal, Imphal West,	
Di. Harikumar i anamauka	Indian	Pin: 795140	
		State: Manipur	
		Country: India	
		Assistant Professor	
		Chintamani College Of Arts & Science,	
		Gondpipri,	
Ms.P.S.Chandel	Indian	Distribution:Chandrapur,	
		Pin: 442702	
		State: Maharashtra	
		Country: India	
		Assistant Professor	
		Shri JSPM Arts Comm and Science	
Dr. Cashin Harry:		College, near HP petrol pump, Dhanora,	
Dr. Sachin Hemraj	Indian	Gadchiroli	
Dhawankar	maian	Pin:442606,	
		State: Maharashtra	
		Country: India	

Hereby request f	for early	publication	of my	application	numbered	2022	dated	
under section 11A	A (2) of t	the act.						

Date 10/06/2022

M. Parthamat

Dr M Parthasarathy (Applicant's Signature)

To
The Controller of patents,
The Patent office at Delhi/Mumbai/Chennai/Kolkata

FORM 3

THE PATENTS ACT 1970

(39 of 1970)

&

The Patents rules, 2003

STATEMENT AND UNDERTAKING UNDER SECTION 8

(See section 8, Rule 12)

We,

APPLICANTS (S) NAME	NATIONALITY	ADDRESS
NAVIL	NATIONALITY	Associate Professor and Head of the
		Department of Physics Vels Institute of
		Science, Technology and Advanced Studies
Dr. M. Parthagarathy	T 11	(Vels University), Velan Nagar,
Dr M Parthasarathy	Indian	Pallavaram,
		Chennai
		Pin: 600117
		State: Tamilnadu
		Country: India
		Senior Research Associate
		National Metallurgical Laboratory- CSIR
Dr. Anand Kumar Gummadi	Indian	Pin: 831011
		State: Jharkhand
		Country: India
		Assistant Professor in Chemistry
	Indian	SNS College of Engineering, SNS Kalvi
		Nagar, Sathy Main Road,
Mr. Ganeshkumar P		Kurumbapalayam, PO, Coimbatore,
		Pin: 641107
		State: Tamilnadu
		Country: India
		Associate Professor
		SRI Y N College (A), Narsapur
Dr L Malleswara Rao	Indian	Pin: 534 275
	maian	State: Andhra Pradesh
		Country: India
		Regional officer
		Directorate of Technical Education,
W. W. ' D. D. W.		Guindy, Chennai
Mr.Thiru. B.Deepan Kumar	Indian	Pin: 600025
		State: Tamilnadu
		Country: India Assistant Professor
		Sri Eshwar College of Engineering,
Dr. A. Akila	Indian	kondampatti, Kinathukadavu, Coimbatore
		Pin:641202
		State: Tamil Nadu
		Country: India

Dr.A.Ramu	Indian	Asst Professor of in Physics Ganesar college of arts and science Melaisivapuri Ponnamaravathy(tk) Pudukkottai(dt) Pin: 622 403 State: Tamilnadu Country: India
Dr. Harikumar Pallathadka	Indian	Director and Professor Manipur International University, Ghari, Imphal, Imphal West, Pin: 795140 State: Manipur Country: India
Ms.P.S.Chandel	Indian	Assistant Professor Chintamani College Of Arts & Science, Gondpipri, Distribution:Chandrapur, Pin: 442702 State: Maharashtra Country: India
Dr. Sachin Hemraj Dhawankar	Indian	Assistant Professor Shri JSPM Arts Comm and Science College, near HP petrol pump, Dhanora, Gadchiroli Pin:442606, State: Maharashtra Country: India

hereby declare:

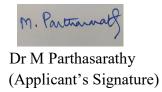
(i) That I/we have not made any application for the same/substantially the same invention outside the India.

Or

We who have made this application No. ------ Dated alone/jointly with-----, made for the same/substantially same invention, application(s) for patent in the other countries, the particulars of which are given below:

Name of the country	Date of application	Application No.	Status of the application	Date of publication	Date of grant
NA	NA	NA	NA	NA	NA

- (ii) That the rights and application has been assigned to none.
- (iii) That I undertake that upto the date of grant of the patent, by the controller, I would keep him informed in writing the details regarding corresponding applications for patents filed outside India within six months from the date of filing of such application.



To,

The controller of Patents,
The Patent Office, At Delhi/Mumbai/Chennai/Kolkata, India.

FORM 2

THE PATENTS ACT 1970

39 of 1970

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THE PATENT RULES 2003

COMPLETE SPECIFICATION

(SEE SECTIONS 10 & RULE 13)

1. TITLE OF THE INVENTION

Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew

2. APPLICANTS (S)

27.12.52		
NAME	NATIONALITY	ADDRESS
Dr M Parthasarathy	Indian	Associate Professor and Head of the Department of Physics Vels Institute of Science, Technology and Advanced Studies (Vels University), Velan Nagar, Pallavaram, Chennai Pin: 600117 State: Tamilnadu Country: India
Dr. Anand Kumar Gummadi	Indian	Senior Research Associate National Metallurgical Laboratory- CSIR Pin: 831011 State: Jharkhand Country: India
Mr. Ganeshkumar P	Indian	Assistant Professor in Chemistry SNS College of Engineering, SNS Kalvi Nagar, Sathy Main Road, Kurumbapalayam, PO, Coimbatore, Pin: 641107 State: Tamilnadu Country: India

		,
Dr L Malleswara Rao	Indian	Associate Professor SRI Y N College (A), Narsapur Pin: 534 275 State: Andhra Pradesh Country: India
Mr.Thiru. B.Deepan Kumar	Indian	Regional officer Directorate of Technical Education, Guindy, Chennai Pin: 600025 State: Tamilnadu Country: India
Dr. A. Akila	Indian	Assistant Professor Sri Eshwar College of Engineering, kondampatti, Kinathukadavu, Coimbatore Pin:641202 State: Tamil Nadu Country: India
Dr.A.Ramu	Indian	Asst Professor of in Physics Ganesar college of arts and science Melaisivapuri Ponnamaravathy(tk) Pudukkottai(dt) Pin: 622 403 State: Tamilnadu Country: India
Dr. Harikumar Pallathadka	Indian	Director and Professor Manipur International University, Ghari, Imphal, Imphal West, Pin: 795140 State: Manipur Country: India
Ms.P.S.Chandel	Indian	Assistant Professor Chintamani College Of Arts & Science, Gondpipri, Distribution:Chandrapur, Pin: 442702 State: Maharashtra Country: India

Dr. Sachin Hemraj Dhawankar	Indian	Assistant Professor Shri JSPM Arts Comm and Science College, near HP petrol pump, Dhanora, Gadchiroli Pin:442606, State: Maharashtra Country: India
--------------------------------	--------	---

2. PREAMBLE TO THE DESCRIPTION

COMPLETE SPECIFICATION

The following specification particularly describes the invention and the manner in which it is to be performed

Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew

Abstract:

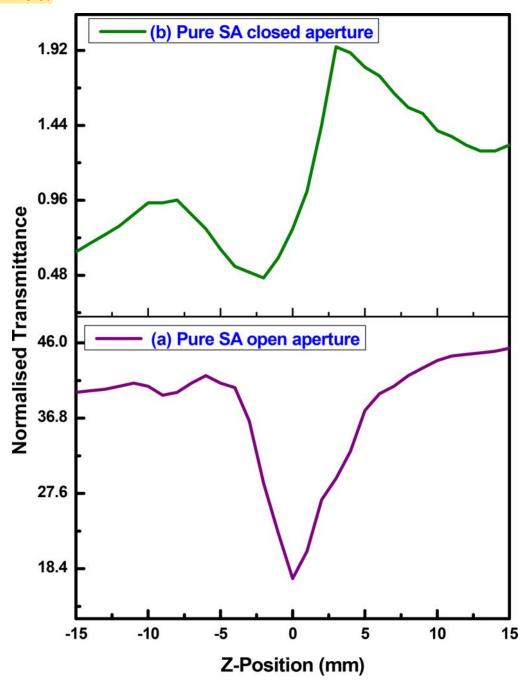
Slow evaporation at room temperature generated single crystals of pure and NaCl-mixed sulphamic acid (SA). Using studies with single crystals and powders, the structure and properties of the lattice were determined. Dopant was detected by EDAX in the SA lattice. The visible band in the UV-Vis spectrum receives the most light. The band gap energy of pure SA crystals was 6.06 eV, while NaCl-doped SA crystals had band gap energy of 5.70 eV. Pure SA crystal emits light at 335 and 424 nm, according to the PL spectrograms, while doped SA crystal emits light at 340 and 428 nm. Using thermogravimetric and differential thermal analysis (TGA/DTA), it was discovered that pure SA crystals and crystals containing NaCl are stable up to 331 °C and 334 °C, respectively. Using Vickers microhardness analysis, it is possible to determine that the crystals' hardness rises with increasing load. A photoconductivity analysis found that the crystals produced by this method have negative photoconductivity. This approach yields crystals with a higher Laser Damage Threshold (LDT) than a standard potassium dihydrogen phosphate (KDP) crystal. The Z-scan method was used to determine the nonlinear refractive index, nonlinear optical absorption, and third order nonlinear optical susceptibility (TONLO) of crystals generated with a He-Ne laser.

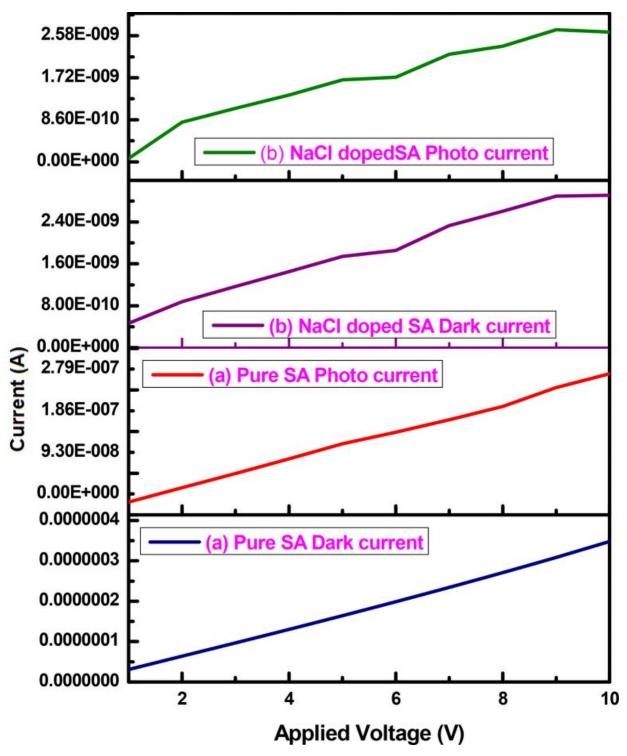
Descriptions:

Nonlinear optical susceptibility of the third order In recent years, three materials have been utilised in numerous technologies, such as 3D optical memory, optical switching, optical modulation, laser technology, and optical storing and limiting technologies. In recent decades, scientists have produced organic and inorganic materials that can be used in a variety of UV, NIR, and IR applications. In two-photon laser scanning microscopy and other applications involving low-intensity lasers, phase conjugation, microfabrication, it is essential to have materials with high nonlinear absorption, quick response time, and strong third-order optical nonlinearity. Inorganic crystals are less prone to shatter than organic crystals when struck by a laser. The lack of broad -electron delocalization limits the optical nonlinearity of inorganic NLO materials, despite their excellent mechanical and thermal properties. Metal ions and rare earth ions are capable of enhancing the optical properties of inorganic single crystals. It strengthens crystals due to its ionic zwitter nature. Sulphamic acid, represented by the formula H2NSO3H, is a powerful inorganic acid whose properties change when coupled with water. The key lattice parameters of sulfamic acid's orthorhombic lattice are a = 8.078(), b = 8.116 (), and c = 9.268. (). The derivatives of sulphamic acid are among the amino acids with the highest industrial potential. When dopants are put to single crystals, they considerably improve them. Few studies have investigated the effect of dopants on the development and properties of a single crystal of inorganic SA. Adding metal to crystals increases their optical, ferroelectric, and dielectric properties, according to a survey of the scientific literature. When K+ and Na+ are introduced as dopants, crystals grow more quickly, have superior physical and chemical properties, and respond more effectively. Thaila et al. studied the effects of adding 0.1 mol percent NaCl and KCl to SA. This paper discusses the effects of NaCl (1 percent ion) on sulfamic acid. This study examines the production and characterization of sulphamic acid crystals with and without NaCl doping. We also discuss the effect of the dopant on the sulfamic acid. The structure and optical properties of these SA crystals, as well as their microhardness, dielectricity, thermal stability, laser damage threshold, and light-conducting capacity, were characterised. Regarding the third-order nonlinear optical property (TONLOP) of SA and NaCl-doped SA, we know

nothing. Using the Z-scan approach, researchers explored the third-order nonlinear optical property (TONLOP) of NaCl-doped SA crystals. Slow evaporation was utilised to produce sulphamic acid single crystals that were 1 mol percent pure and NaCl-doped. The exteriors of the crystals are transparent. An analysis of a single crystal and a powder by X-ray diffraction demonstrates that the orthorhombic crystal structure exists in both pure and 1 mol percent NaCl-doped samples of sulphamic acid. According to the EDAX spectra, SA crystal contains Na+ ions. Crystals of pure and doped sulphamic acid absorb little visible light, and doping has little effect on their transparency. Experiments on photoluminescence found two significant violet emission peaks at 335 and 340 nm. TGA/DTA experiments demonstrate that contaminants increase the thermal stability of SA crystals. The Vickers microhardness value increases with increasing force, and cracks appear when more than 200 grammes of force are applied. Crystals of pure SA showed a hardening coefficient of 2.018, whereas crystals containing 2.233 mol percent NaCl had a hardening coefficient of 2.233. As the voltage was increased, the photocurrent and dark current of both pure and NaCl-doped (1 mol percent) SA crystals grew in a straight line. The thresholds for damage for pure SA, SA with added NaCl, and KDP crystals are 27.42, 42.83, and 17.72 GW/cm2 respectively. Pure SA crystals have a third-order nonlinear optical susceptibility of 1.735 107 esu, while crystals doped with 1 percent NaCl have a susceptibility of 2.143 107 esu.

DRAWINGS:





CLAIMS

- 1. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew a cutting edge technology.
- 2. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that it is a smart communication system.

- 3. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that in this paper, we analyzed and discussed various aspects.
- 4. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that this research looks at all of the important and recent work that has been done so far, as well as its limitations and challenges
- 5. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that in recent years, Dye molecules has become a hot topic in India.
- 6. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that gives a broad overview of various Challenges faced.
- 7. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that proposed system is more accurate and fast.
- 8. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that this paper has many applications.
- 9. Dye molecules changed the shape, color, texture, and electrical charge of sulphamic acid crystals as they grew of claim 1, wherein said that this paper attempts to explain the concept, and assess its impact.