



Contd from...1  
**Patenting in Materials...**

Company	No. of patent applications
Council of Scientific & Industrial Research (CSIR)	119
Siemens Aktiengesellschaft	33
Voest-Alpine Industrieanlagenbau GMBH	30
Steel Authority of India Ltd. (SAIL)	29
Chief Controller R&D, Ministry of Defence	24
El Du Pont de Nemours & Company	18
Widia GMBH	14
Engelhard Corp	13
Institut Francais Du Petrole	12
Emitec Gesellschaft	11
Mannesmann Aktiengesellschaft	11
The Associated Cement Companies Ltd.	10
BASF Aktiengesellschaft	10
Corning Inc	10

Of the 342 applications filed by Indians, 66 have been filed by individuals. Given below is a list of the Indian companies filing 3 or more than 3 applications during this period.

Company	No of patent applications
Council of Scientific & Industrial Research (CSIR)	119
Steel Authority of India Ltd. (SAIL)	29
Chief Controller R&D, Ministry of Defence	25
The Associated Cement Companies Ltd.	10
Widia (India) Ltd.	9
Carborundum Universal Ltd.	7
Indian Space Research Organisation	5
National Mineral Development	5
Indian Association for Cultivation of Science	4
Department of Science & Technology	4
Institute of Plasma Research	3
Bharat Heavy Electricals Ltd. (BHEL)	3
Murata Manufacturing Company	3
International Advanced Research Centre	3

CSIR has filed the highest number of applications leaving behind all the Indian and the foreign companies. CSIR's 119 applications include extraction of tungsten, nickel, cobalt, iron, uranium, zinc, molybdenum, vanadium, preparation of composite catalytic materials, multi-zirconia composites, boron-silicon nitride powders, sodium gluconate, cement concrete, nano-crystalline alumina powders, aluminum and its alloys, ceramic grade plaster of Paris, ceramic tiles, portland cement and many other applications related to processing of materials. Steel Authority of India Ltd. (SAIL) has all the 29 applications related to

steel processing. These applications relate to process for producing high alumina refractory blocks, steel of increased tensile strength and abrasion resistance, ferritic stainless steel, alumina-zirconia silica composite for use as high quality refractory material, weldable quality steel of increased yield strength and having corrosion resistance, formable quality cold rolled steel, ceramic coating of alumina-carbon graphite based refractories, method of casting ingot moulds for production of steel ingots and other applications related to sintering and production of ductile iron.

25 applications filed by the Ministry of Defence are for high strength structural steel, inter-metallic titanium based alloys, preparation of iron aluminides, iron based alloys, preparation of titanium matrix compounds, light weight ceramic material, optical window grade zinc sulphide, glass fibre reinforced plastic composites, nickel based super alloys and articles thereof, isothermal forging process for preparation of titanium alloy, preparation of aluminium, zinc, magnesium, copper based alloys and microstructural alloys.

10 applications filed by The Associated Cement Companies Ltd. relate to extraction of high purity zirconia powder, manufacturing of high purity dielectric material such as barium titanate, rapid hardening of grout

*contd on...14*

***Incremental inventions can lead to new patents***

## Case Law : Fair Use Is Not A Copyright Infringement

A copyrighted work demands that before copying, distributing, publicly performing or displaying that work, requisite prior permission must be taken from the owner of that right. But there are numerous circumstances in which the copyright owner's rights are not absolute. The doctrine of fair use is one such exception which may in certain exceptional cases justify the use of digital information without permission from the owner of the copyright. A copyright case involving on-line activity and based on the doctrine of fair use between Kelly (plaintiff) and Arriba Soft Corp (defendant) was decided in the United States.

### The Case

Arriba operated on internet visual search engine which returned search results in the form of reduced images called thumbnails. Arriba's visual search engine collected thumbnails using a web crawler (Web crawler is a computer program that searches the internet for images, converts the images into thumbnails and adds them to a database). Clicking on the thumbnail displayed an enlarged version of the image, a description of its dimension and a link to the original website of the image but no other parts of the original website could be viewed.

Arriba had converted thirty five of Kelly's images into thumbnails

and added them to their database. Kelly had two websites featuring photos of California gold rush country. One was www.goldrush1849.com promoting Kelly's book on the subject and the other www.shomethodgold.com marketed corporate retreats.

Kelly alleged that Arriba had violated the Digital Millennium Copyright Act (DMCA) by displaying his images without the copyright management information that originally appeared on his website in the text surrounding the images.

The court decided the above case based on the doctrine of fair use and considered the following 4 factors which would otherwise have constituted copyright infringement :-

1. Purpose and character of the use
2. Nature of the copyrighted work
3. Amount and substantiality of the portion used, and
4. Market harm

Regarding the first factor the court concluded that there was no doubt that Arriba had used Kelly's images for commercial purposes and this went against the fair use. But at the same time the court reasoned that the use was not that serious and exploitative in nature as traditional commercial uses since the images were reproduced as a result of a generally indiscriminate method of gathering images. The defendant did not exploit the images and the images did not represent a significant element of defendant's

commerce. Thus the purpose and character of the use qualified for fair use.

Secondly, the nature of copyrighted work was against the fair use because the plaintiff's photos were the creative works protected by copyright. Had the copying been done from the factual work it would have been tolerable but copying from more creative fictional works went against fair use.

Thirdly, Arriba had copied the images in their entirety which were necessary for the search engine to usefully categorise and provide access to images on the internet. Here the court concluded that due to the presence of the image attributes page, this factor weighed 'slightly against fair use'

Regarding the effect of the use upon the potential market of Kelly, Arriba argued that its search engine did not compete with Kelly's sites instead increased the traffic to them. Since Kelly did not present any proof showing the effect on his business, the court considered this factor in favour of Arriba. Regarding the violation of the Digital Millennium Copyright Act the court found that when the user clicked on the image they were given a link to the originating site where the associated copyright management information would be located and that Arriba warned users of restrictions and copyright limitations. Thus Arriba did not have the requisite knowledge that it would cause users to infringe Kelly's copyrights.

Contd on...4

*Maintain a log book of your research and experiments*

contd from...3

### Case Law:...

When considering, the purpose and character of Arriba's use, the court ruled that the use was transformative because of the different purposes of Kelly's and Arriba's use. The court's finding was that Arriba's use of a somewhat incidental nature is suspicious because Arriba's software was specifically designed to gather as many images as possible and was therefore not incidental but intentional. Although the court never expressly discussed public interest as a separate factor, the court's analysis of the four enumerated fair use factors was heavily influenced by the benefits to the public from Arriba's search engine, since search engines are essential to make the internet a practical tool for locating and disseminating information provided they are configured so as to impact minimally the copyright holder's rights.

This decision based on fair use highlights the need to rely on technology, and not merely on copyright law, to control the distribution and exploitation of their copyrighted works. For internet users and entrepreneurs, the decision appears to broaden the fair use exception to permit new, transformative uses of the copyrighted works of others, especially if those uses further some public interest.

(Source : *Copyright World*, Issue 99, April 2000)

## Case Study

### A path breaking invention for improving the human vision

A US patent (Pat No 5,777,719) was granted to David R. William and Junzhong Liang on July 7, 1998 for inventing a method and apparatus for improving vision and the resolution of retinal images. The patent now stands assigned to the University of Rochester, New York. The invention is basically directed to a method of, and an apparatus for, measuring and correcting wave aberration of the eye such that the measured data could be used for developing corrective optical elements leading to an improvement in the optical quality of the eye.

### Prior art

Current ophthalmic lenses can only correct defocus and astigmatism and these lenses leave uncorrected additional aberrations like spherical aberration, coma and a host of irregular aberrations. These aberrations not only blur the images formed on the retina but also blur images taken of the living human retina. The latter obviously would pose difficulty in correct diagnosis.

An aberroscope disclosed in 1984 provided simultaneous wave aberration measurements of the entire pupil but could not sample pupil with a spacing other than 0.9 mm. Moreover rapid automated computation of the

wave aberration was not demonstrated. One of the inventors of this patent developed an apparatus to measure wave aberration of the human eye using Hartmann-Shack wave front sensor. The sensor was used to measure the retinal reflection of a focussed light beam on the fovea. However, this disclosure only allowed measurement up to the fourth order polynomial functions. The wavefront fitting with polynomials up to the fourth order does not provide a complete description of the eye's aberrations. Further, this instrument was not equipped to remove unwanted light reflected from other surfaces, such as lenses and the cornea of the eye.

Similarly, the use of other apparatus like the scanning laser ophthalmoscope did not allow correction higher than second order or it only resulted into correction of astigmatism of the eye. Therefore, it can be seen that quantitative measurements of the irregular aberrations of the eye had not been possible and a mechanism to correct the monochromatic aberrations of the eye other than defocus and astigmatism did not exist.

### Object of the invention

1. To measure higher order aberrations of the eye and use the data to compensate for those aberrations with customised optical element.

Contd on... 5

Visit us at [www.indianpatents.org](http://www.indianpatents.org)

Contd from...4

### Case Study

2. To provide an improved wavefront sensor which rejects light reflected from structures other than retina.
3. To correct the wave aberration in a feedback manner such that the subject achieves normal or super normal vision

### Detailed description of the invention

Fig 1 is a schematic diagram of the apparatus which measures the aberrations of the eye using a Hartmann-Shack wavefront sensor and then corrects them in a feedback loop with a compensating component such as a deformable mirror.

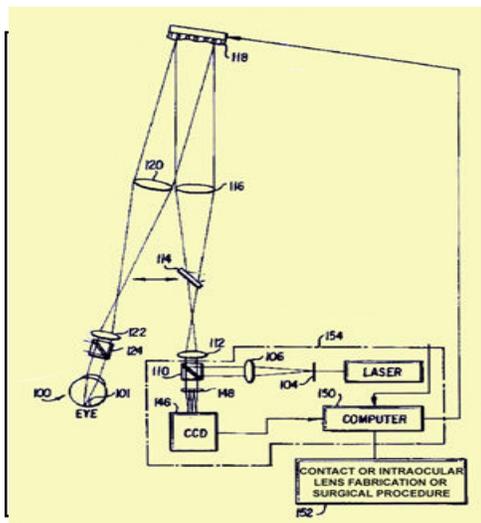


Fig. 1

To measure the eye's wave aberration, a point source is produced on the retina by laser 102. The laser passes through a spatial filter 104 and is collimated by an achromatic doublet lens 106. The collimated beam is reflected by the polarizing beam splitter 110, passes through lenses 112 and 116 and is incident on a deformable mirror 118. The laser beam reflected from the deformable mirror is focussed by lens 120, passes through 122 and the second beam splitter 124 and reaches the eye at a diameter of about 1.5 mm at the pupil. The lens of the eye 100 focuses the laser beam on its retina 101.

The light reflected from the retina 101 forms a distorted wavefront at the pupil which is recreated in the plane of the deformable mirror 118 by lenses 122 or 120 and also in the plane of the lenslet array of a Hartman-Shack wavefront sensor 148 by lenses 116 and 112. The pupil is conjugate with a two dimensional array of lenslets 148. Each of the lenslets in the array 148 forms an aerial image of the retinal point source on the CCD camera 146. The CCD camera sends the digitized images to the computer 150 where it is stored in RAM or on magnetic or other storage media.

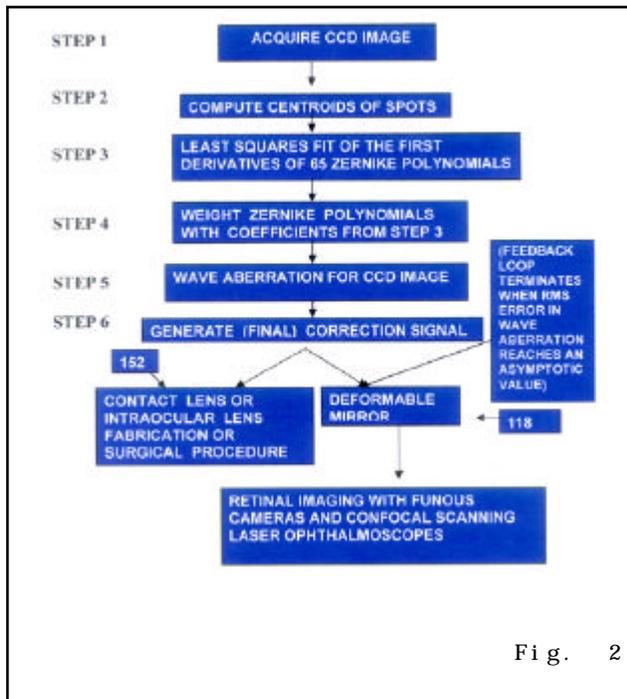
Aberrations displace each spot by an amount proportional to the local slope of the wavefront at each lenslet. The slope of the wavefront can be determined from the displacement of these spots relative to a known aberration free reference. The wavefront sensor 154 measures the local slopes in both X and Y direction and 217 locations simultaneously across the dilated pupil. From the array of slopes, the wave aberration is reconstructed. This aberration is compensated with a device conjugate with the pupil of the eye 100 that can control the phase of the light and different points in the pupil.

Fig 2 gives the steps performed by the software resident in the computer 150. At step 1, the digital image is acquired by the computer 150 from the CCD camera. Each image consists of 512 pixels by 512 pixels at 12 bits. At step 2, the computer computes the centroid of the spot formed by each lenslet of the wavefront sensor. At step 3, the slope data are fit with the sum of the first derivatives of 65 Zernike polynomials using a least square procedure to determine the weight of each polynomial. At step 4, the Zernike polynomials are weighted with coefficients calculated at step 3. The 65 polynomials in the wavefront fit include all Zernike modes with radial power less than or equal to 10 except for the piston term. The first order modes are the linear terms. The second order

contd on...6

**Do not publish your invention without first filing a patent application**

Contd from...5  
**Case Study**



modes are quadratic terms which correspond to familiar aberrations, defocus and astigmatism. The third order represents coma and coma like aberrations. The other higher order modes take care of practically all types of aberrations. The weighted Zernike polynomials are added together at step 5 to obtain reconstructed wave aberration.

The wave aberration is evaluated at the locations of the actuators of the deformable mirror 118 to produce correction signal at step 6 which is then sent by the computer to the wavefront compensation device which is preferably a deformable mirror 118. The feed back loop continues to receive the reconstructed wave aberration results until the RMS error in the reconstructed wave aberration signal reaches an asymptotic value. At that point the deformable mirror 118 has been deformed such that, when the eye looks through it, it will compensate for all the detected aberrations of the eye 100.

There are in all 25 claims for this landmark

invention. We reproduce only the claim 1 :

A wavefront sensor for determining the wave aberrations of the living eye, said wavefront sensor receiving a reflected point source image of the retina of said eye, comprising;

A plurality of lenslets which form a lenslet array for receiving said reflected point source image of said retina and for creating an aerial image of the retinal point source; said lenslet array being configured such that it is capable of providing resolution for at least fifth order aberrations;

A camera located adjacent to said lenslet array for viewing said aerial image of the retinal point source formed on each of said plurality of lenslet array; and

A digital data processor connected to receive video output signals from said camera and for converting said video output signals to digital signals representative of said retinal point source aerial images, said digital data processor further calculating the wave aberrations of said eye so as to include at least fifth order modes, using said representative digital signals.

*This invention can have four major applications. Firstly, the invention can be utilized to provide a more accurate measure of aberrations of the unaided eye. Secondly, it can be used to evaluate the benefits of various techniques to correct the aberrations of the eye, such as custom glasses, custom contact lenses and surgical procedures. Thirdly, this can be used to improve vision in optical instruments such as telescopes and binoculars, custom glasses and lenses and with surgical procedures such as photorefractive keratectomy. Finally, the invention can be utilised for improving the axial and transverse resolution of images of the living retina.*

***Incremental inventions can lead to new patents***

## Patent Filing In ARIPO Through PCT

African Regional Industrial Property Organisation (ARIPO) is an intergovernmental organisation representing 13 African States namely Botswana, Gambia, Ghana, Kenya, Lesotho, Malawi, Sierra Leone, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe. At the moment, Botswana and Zambia are not members of the PCT and thus cannot be designated when entering the ARIPO regional phase of a PCT application. A summary of requirements for entry into national phase when ARIPO has been designated in a PCT application is presented. All the member countries of ARIPO, which are also members of PCT, act as competent receiving offices for nationals and residents of these countries. A PCT application written and translated into English must reach ARIPO within 21 months from the priority date if the applicant has decided to enter into national phase after the search report or within 31 months from the priority date if the applicant has decided to enter into the national phase after the examination report. The patent application covering description, claims, any text matter of drawings, abstract must be translated into English. Copy of the international application is

not mandatory. The Austrian Patent Office, Swedish Patent Office or European Patent Office act as the competent international searching authority and competent international preliminary examining authority. No search fee is required if an international search report has been established for the international application. The special requirements of the receiving office are:-

1. Appointment of an agent if applicant is not resident in an ARIPO contracting state

2. Assignment deed of the priority right where the applicants are not identical.

Any agent authorised to represent applicants before the national office of an ARIPO contracting state can act as an agent. The receiving office also accepts the filing of international application with requests in PCT-EASY format.

The fee schedule in US dollars for the PCT application in ARIPO is as follows. All payments must give the application number (national if already known, international if the national number is not yet known). Payment of fees may be made by cash payment or by bank cheque.

## FEES (US dollars)

<b>National fee, comprising:</b>	
-Basic fee (application fee)	150
-Designation fee for each ARIPO member State in which protection is sought	50
<b>Publication fee</b>	200
-surcharge for each additional page in excess of 40	7.50
-Surcharge for each additional claim in excess of 10	20
Grant fee	250
Fee for registration of assignments, transmissions, amendments, etc	50
Fee for requesting conversion of an ARIPO application into a national application	100
<b>Annual fees in respect of each designated State</b>	
For the 1st year	40
For the 2nd year	50
For the 3rd year	60
For the 4th year	70
For the 5th year	80
For the 6th year	90
For the 7th year	100
For the 8th year	110
For the 9th year	120
For the 10th year	130
For the 11th year	140
For the 12th year	150
For the 13th year	160
For the 14th year	170
For the 15th year	180
For the 16th year	190
For the 17th year	200
For the 18th year	210
For the 19th year	220
For the 20th year	230
Surcharge for late payment of annual fees	70
And for every month or fraction thereof that the fee remains unpaid	10

*Maintain a log book of your research and experiments*

## An Update on Neem Related Patents

Neem has almost found a permanent place in discussions involving patents related to natural products. Recently, the news papers were filled with news that EPO had revoked a neem patent entitled "Method of Controlling Fungi on Plants by the Aid of a Hydrophobic Extracted Neem Oil" This revocation was based on petitions filed by some Indian NGOs. PFC keeps receiving requests for publishing an inventory of neem related patents granted by major patent offices in the world. We bring an update on patents granted by the USPTO and EPO in the last twenty four and twenty two years respectively. It also brings out the applications accepted by the Indian Patent Office in the last five years.

USPTO has granted 53 neem related patents. A list of these patents is given in Table I. 12 of these patents have been granted to Indian agencies; CSIR has received 6 patents. The maximum number of patents have been granted to W R Grace & Co followed by Rohm and Hass Co.

**Table I**  
**Patents Granted by USPTO**

S.No.	Title of the Invention	Assignee/Applicant
1.	Article for release of repellents and insecticides	Matson Clifford D (Inventor)
2.	Process for the preparation of spermicidal agents and other biologically active materials	National Research Development Corporation
3.	Check mite composition and a process for preparing the same	Vittal Mallaya Scientific Research Foundation
4.	Triterpene derivatives of azadirachtin having insect antifeedant and growth inhibitory activity	Council of Scientific and Industrial Research
5.	Natural insect repellent formula and method of making same	Burlington Bio-Medical & Scientific Corp.
6.	Pesticidal dry powder formulation enriched in azadirachtin up to 88% an emulsifiable concentrate enriched up to 30% of azadirachtin and a process for preparing such formulation and concentrate from neem seed/kernel	Sankaram et al (Inventors)
7.	Shelf stable insect repellent, insect growth regulator and insecticidal formulations prepared from technical azadirachtin isolated from the kernel extract of Azadirachta indica	Fortune Biotech Limited
8.	Chewing gum containing a teeth whitening agent	Media Group
9.	Triterpene derivatives of azadirachtin having insect antifeedant and growth inhibitory activity	Council of Scientific and Industrial Research
10.	Process for preparing purified Azadirachtin in powder form from neem seeds and storage stable aqueous composition containing Azadirachtin	Dalmia Centre for Biotechnology

## International News

The World Trade Organisation has given a ruling that Canada must extend the term of patent protection from 17 to 20 years on about 170,000 outstanding patents issued before 1989. Under the terms of a bilateral agreement with the US it had agreed to provide patent protection for 20 years to patents issued after 1989. US had challenged this in the WTO last year. The pharmaceutical industry will be significantly affected by this ruling especially the Bristol-Myers Squibb whose cholesterol reducing Pravachol will have an extra 11 months of protection.

**(Patent World, Iss 121, April 2000)**

In a largest ever criminal fine for CD piracy, a landmark ruling in the Netherlands has forced a six-man CD pirate gang to repay half their illegal profits- a total of one million guilders (US \$ 500,000) to the Dutch state. The gang members have been held responsible for the distribution of around 350,000 illegal pirated CDs and making criminal profits of two millions guilders.

**(Copyright World, Iss 100, May 2000)**

The Supreme Court of United States has launched a website [www.supremecourtus.gov](http://www.supremecourtus.gov). The website shall provide access to the court's decisions, argument calendars, schedules, rules, visitors' guides and bar admission forms.

**(Patent World, Iss 122, May 2000)**

*Contd on...9*

*Visit us at [www.indianpatents.org](http://www.indianpatents.org)*

11.	Process for the isolation of an active principle from azadirachta indica useful for controlling gastric hyperacidity and gastric ulceration	Council of Scientific and Industrial Research
12.	Method for producing azadirachtin by cell culture of Azadirachta indica	Rohm and Haas Company
13.	Method for the production of storage stable azadirachtin from seed kernels of the neem tree	Trifolio-M GMBH, Herstellung Und Vertrieb Lahnau
14.	Synergistic use of azadirachtin and pyrethrum	Thermo Trilogy Corporation
15.	Triterpene derivatives of azadirachtin having insect antifeedant and growth inhibitory activity and a process for extracting such compounds from the neem plant	Council of Scientific and Industrial Research
16.	Stability of azadirachtin-containing solid	Thermo Trilogy Corporation
17.	Reduced-cloud-point clarified neem oil and methods of producing	Thermo Trilogy Corporation
18.	Triterpene derivatives of azadirachtin having insect antifeedant and growth inhibitory activity and a process for extracting such compounds from the neem plant	Council of Scientific and Industrial Research
19.	Method for producing azadirachtin concentrates from neem seed materials	Rohm and Haas Company
20.	Co-extraction of azadirachtin and neem oil	W R Grace & Co.
21.	Neem oil as a male contraceptive	Huffstuler Jr., Steuart; Gary M. (Inventors)
22.	Combinations of neem seed extract and bifenthrin for control of ectoparasites on animals	FMC Corporation
23.	Preparation of high purity neem seed extracts	Rohm and Haas Company
24.	Hydrophic extracted neem oil—a novel insecticide	W R Grace & Co.
25.	Fungicidal compositions derived from neem oil and neem wax fractions	W R Grace & Co.
26.	Hydrophobic extracted neem oil—a novel insecticide	W R Grace & Co.
27.	Co-extraction of azadirachtin and neem oil	W R Grace & Co.
28.	Triterpene derivatives of azadirachtin having insect antifeedant and growth inhibitory activity and a process for extracting such compounds from the neem plant	Council of Scientific and Industrial Research
29.	Stable extracts from neem seeds	Rohm and Haas Company
30.	Insecticidal compositions derived from neem oil and neem wax fractions	W R Grace & Co.
31.	Preparation of edible neem oil	Rohm and Haas Company
32.	Therapeutic compounds derived from the neem tree	Udeinya; Iroka J. (Inventor)
33.	Hydrophobic extracted neem oil—a novel fungicide use	W R Grace & Co.

Contd from...8

### International News

Procter & Gamble has donated its 100 unused patents covering enhanced paperboard technology to Western Michigan University. The technology of these patents shall be used to make sturdy card board containers used for shipping and will enhance the University's paper technology programme. Last year it had donated 40 patents to the Milwaukee School of Engineering.

**(Patent World, Iss 122, May 2000)**

The European Patent Office (EPO) has lifted a four-year temporary ban on applications for patents on transgenic plants and animals. This has followed a ruling by its top appeals board saying that such patents are not excluded by the wording of the European Patent Convention.

With effect from 1.1.2000 any applicant for filing an international application for a patent under the Patent Cooperation Treaty (PCT) may claim the priority of one or more earlier applications for the patent in, or for any member of the WTO that is not a party to the Paris Convention (the date on which the earlier application was filed, being a date filing within the period of 12 months preceding the international filing date).

The Israeli company, Pro-laser has been granted a US patent for a process and apparatus to change the curvature of the

Contd on...10

**Do not publish your invention without first filing a patent application**

34.	Hydrophobic extracted neem oil-a novel fungicide	W R Grace & Co. &USA as represented by the Secretary of Agriculture
35.	Storage stable pesticide compositions comprising azadirachtin and epoxide	AgriDyne Technologies, Inc
36.	Acaricidal combinations of neem seed extract and bifenthrin	FMC Corporation
37.	Fungicide compositions derived from neem oil and neem wax fractions	W R Grace & Co.
38.	Neem oil fatty acid distillation residue based pesticide	Godrej Soaps Limited.
39.	Storage stable high azadirachtin solution	W R Grace & Co.
40.	Selective removal of aflatoxin from azadirachtin containing compositions	AgriDyne Technologies, Inc
41.	Reversible fertility control for prevention of pregnancy in females	National Institute of Immunology
42.	Storage stable azadirachtin formulation	W R Grace & Co.
43.	Neem oil emulsifier	PPG Industries, Inc
44.	Azadirachtin derivative insecticides	Native Plant Institute
45.	Dentifrice	Floss Products Corporation
46.	Azadirachtin derivative insecticides	Terumo Corporation
47.	Storage stable azadirachtin formulation	W R Grace & Co.
48.	Method to prepare an improved storage stable neem seed extract	W R Grace & Co.
49.	Insecticidal hydrogenated neem extracts	Rohm and Haas Company
50.	Azadirachtin-like compounds and insect-destroying agents containing them	Max-Planck-Gesellschaft zur Foederung der Wissenschaften
51.	Stable anti-pest neem seed extract	Vikwood, Ltd.
52.	Hot-water extracts of neem bark	Terumo Corporation
53.	Neem bark extracts	Terumo Corporation

27 patents have been filed in EPO during this period out of which 11 have already been granted. Similarly there are 16 PCT applications filed in the area. The list of the EPO patents is given in Table II.

**Table II**  
**Patents Granted by European Patent Office**

54.	Method to prepare an improved storage stable neem seed extract	Thermo Trilogy Corporation
55.	Herstellung und vertrieb hochreiner biosubstanzen process for producing a storable azadirachtin-rich insecticide from seed kernels of the neem tree	Trifolio-M GmbH
56.	Storage stable azadirachtin formulation	W.R. Grace & Co

*contd from...9*  
**International News**

cornea. The process is used in the Rodenstock DTK refractive laser.

**(WISTA IPR Biotechnology, Iss 12, June 2000)**

A US patent (Patent No. 6,027, 585) has been granted to researchers at Los Alamos National Lab for a process of fabricating ductile, homogeneous titanium-tantalum alloys. Using the patented method sufficient amounts of the alloys can be made for the manufacture of practical articles. This process yields the alloy which is strong, corrosion-resistant and relatively lightweight that retains its strengths and stability at relatively high temperatures. Titanium-tantalum alloys could be used as an alternative to some of the more expensive super alloys containing niobium used in oil refining or as components in turbines.

**(High Tech Materials Alert, Vol 17 No 6, June 2000)**

A US patent (Patent No 5,007, 708) has been granted to researchers at Georgia Tech Research Institute for a technique for reducing or eliminating surface reflections of incident radiation, from microwave through optical frequencies. This technique enables the deposition of exactly what is needed in terms of AR (anti-reflection) coating and is applicable to a broad frequency range including optical and radar frequencies as well as any

*Contd on... 11*

*Incremental inventions can lead to new patents*

57.	Novel pesticidal compositions derived from neem oil and neem wax	Thermo Trilogy Corporation
58.	Neem oil fatty acid distillation residue based pesticide	Godrej Soaps Limited
59.	Preparation of neem seed extracts	Rohm And Haas Company
60.	Stable extracts from neem seeds	Rohm And Haas Company
61.	Preparation of edible neem oil	Rohm And Haas Company
62.	Composition containing neem oil for fertility control and prevention of pregnancy	National Institute Of Immunology
63.	Method for controlling fungi on plants by the aid of a hydrophobic extracted neem oil	W.R. Grace & Co
64.	Insecticidal hydrogenated neem extracts	Rohm And Haas Company

There are 24 patent applications accepted by the Indian Patent Office since 1995. Complete data on the number of patents sealed is not available, but going by the past trend most of these must have been granted. The list of such applications is given in Table III. As expected, all these applications are process applications. Certainly one observes more activities by the Indian researchers in the last five years. There were 60 applications filed with the Indian Patent Office during this period.

**Table III**

**Patent Applications Accepted in India for Grant of Patent By Indian Patent Office**

65.	A process for the preparation of an antifertility agent from neem oil or extractives	National Research Development Corporation
66.	A process for the recovery of the compound from neem oil having anti-viral anti-fertility	Ranjana Gupta
67.	A process for the manufacture of neem oil based pesticide emulsion concentrate containing 0.003 percent by wt. (300 ppm) azadirachtin	T. Stanes & Co. Ltd. An Indian Co.
68.	A process for separation of neem oil and azadirachtin rich powder from neem seed kernels	Dr. Nagaraj Ramanuj Ayyanagar Dr Kar
69.	Process for manufacturing micro fined neem powder with or without insect bait	Dilip Shantaram Dahanukar An Indian
70.	An improved process for the manufacture of water based formulation of crude neem extract to be used as an insecticide	Unique Pharmaceutical Laboratories Ltd.
71.	A process for separation of azadirachtin concentrate and azadirachtin rich powder from super-critically defatted neem seed kernels	Dr. Nagaraj Ramanuj Ayyanagar Indian

*contd from... 10*  
**International News**  
 arbitrary angle of incidence. It can also be used to fabricate optical elements such as polarisers and wave plates.  
**(Advanced Coatings & Surface Technology, Vol 13 No 6, June 2000)**

**Domestic News**  
 The Indian Institute of Chemical Biology has obtained a US patent (Patent No. 5, 730, 0986) for the isolation of an active ingredient from neem for the treatment of gastroduodenal ulcer. The process involves preparation of a bioactive extract from neem bark and isolation of an active principle from the extract through solvent fractionation and HPLC. The purified preparation has been found to be more effective than the highly potent anti ulcer drug currently available in the market.

According to CSIR statistics, the National Chemical Laboratory, Pune has filed a considerable number of patent applications from 1994-1995 to 1998-1999. It has filed a total of 316 applications during this period. 129 patents have been granted to NCL within this period in India. NCL has also filed a total of 115 patents abroad and has been granted 62 patents during this period. Other organisations under CSIR also have developed a patent savvy culture and are in the process of filing patent applications for their inventions.

*Contd on... 12*

**Maintain a log book of your research and experiments**

72.	A process of preparing purified azadirachtin rich in azadirachtin a in powder form from neem seeds	Dalmia Centre For Biotechnology
73.	A process for the extraction of a stable antifeedant fraction from neem leaves (azadirachta indica) useful for the control of pests particularly pollu beetle	Council of Scientific & Industrial Research
74.	A process for the preparation of storage stable azadirachtin-rich extract from components of the neem tree particularly neem seed kernels	Trifolio-M Gmbh Herstellung Und Vert
75.	A process of preparing a bio-pesticide neem extract	E I D Parry (India) Ltd
76.	Process for the extraction of purified azadirachtin from a solution containing azadirachtin and other materials	Vittal Mallya Scientific Research Foundation
77.	A process for the preparation of a spermicidal agent from neem oil or extractives	National Research Development Corporation
78.	A process for the preparation of spermicidal agent from neem oil or extractives	National Research Development Corporation
79.	A process for the preparation of an antifungal composition from neem oil	SPIC Science Foundation
80.	A process of preparing storages stable aqueous azadirachtin containing azadirachtin a predominant pesticidal composition	Dalmia Centre For Biotechnology
81.	A process for the preparation of a spermicidal agent from neem oil or extractives	The Chief Controller Research & Development
82.	A process for sequential super critical CO <sub>2</sub> extraction and fractionation of neem oil enriched with azadirachtin from neem kernels	IIT (Indian Institute of Technology)
83.	A process of isolation and extraction of azadirachtin from neem seed powder	Sri Banoo Prasad G Bhat Chandrakant
84.	A nutrient composition for the growth of neem plant and a process for preparing the same	Dalmia Centre For Biotechnology
85.	A process for the preparation of emulsifiable concentrate of dry azadirachtin powder having purity up to 88% prepared from neem seeds/kernels	Council of Scientific & Industrial Research
86.	A process for the preparation of storge stable neem seed extract	Rohm And Haas Company
87.	A novel method for the sterilization of neem seeds for better shelf life and fungus proof	M/S Synit Drugs Private Limited
88.	Process for preparing upgraded azadirachtin containing neem products	E I D Parry (India) Ltd

contd from...11

### Domestic News

A Gene Scan Software package developed by Distributed Information Centre, Jawahar Lal Nehru University, New Delhi in collaboration with Unitech International Ltd., Gurgaon has been released by Prof. M.M. Joshi. Gene scan is a handy computational tool for genomic analysis. The program uses a simple ab initio method of gene prediction that is based on a universal property of DNA sequences in all organisms.

**(Biotech News, Vol 1 No 2, April 2000)**

Foundation for Innovation and Technology Transfer (FITT) has filed the following patent applications for IIT Delhi during the period August 1999 to March 2000.

1. Universal electrode holder for shielded metal arc welding and method of use therefore and the process of welding etc.

2. Plasma enhanced shielded metal arc welding, surfacing, oxygen arc lancing and cutting process

3. Fluidised floc bio-reactor, process & apparatus thereof

4. Uni-polymer composites

5. An improved contraceptive for male and female

It has also obtained 4 design registrations for a universal electrode holder for metal arc welding.

**(FITT Newsletter, Vol 6 No 1, April 2000)**

Contd on... 13

Visit us at [www.indianpatents.org](http://www.indianpatents.org)

## PFC on the move....

1. During the period of May-June, PFC organized four patent awareness workshops. The first of these workshops was organized at the request of Department of Atomic Energy at the Indian Rare Earth Complex, Orissa Sand Complex, Chatarpur, on May 2.



(Orissa Sand Complex, Chatarpur)

The second one was held at the Agharkar Research Institute, Pune, an autonomous research institute under the Department of Science & Technology, on May 17, 2000. The third one was conducted at the Indian Institute of Technology (IIT), Kharagpur, on June 8, 2000. The last one was held at Dr. Babasaheb Ambedkar Marathwada University, Aurangabad on June 23, 2000. The workshops were attended by more than 460 scientists, research scholars and technologists. With these, PFC has conducted 71 workshops in different parts of the country.



(Agharkar Research Institute, Pune)



(Workshop held at Aurangabad)

2. During the period, PFC facilitated filing of three patent applications abroad, one each in Japan, the UK and the USA. The patent application covers an invention relating to novel piezoelectric materials, which exhibit strong ferroelectric properties. With these filings, the total tally of patent applications filed through PFC stands at 86.

3. For the first time in India, PFC has produced a 30-minute video on patent awareness titled 'Patents Made Easy' in the form of question and answers. Most commonly asked questions on patents have been answered by experts. This video will be useful for R&D institutions, industries, universities, engineering colleges, schools and other interested organisations. The video is available for Rs. 700/-.

Contd from...12

### Domestic News

Vittal Mallya Scientific Research Foundation has obtained 2 US patents for its eco-friendly aerosol spray and an anti-obesity nutraceutical. The aerosol spray Checkmite controls house dust mites and has fungicidal and disinfectant properties. The anti-obesity product, formulated from the fruits of the Garcinia plant family, popularly known as kokum uses hydroxycitric acid in a form that is 98% pure. The products will be marketed by UB Biotek, a 100% subsidiary of United Breweries.

(Business Standard, 26 June 2000)

Swiss pharmaceutical companies are keen on setting up major research facilities in India once the issue of patent protection is settled. This was felt by the fertilizer Minister Shri Suresh Prabhu during his tour in Switzerland for the promotion of the chemical show India Chem 2000 to be held in New Delhi in October 2000. Representatives from the Swiss Society of Chemical Industries and representative from Novartis Board also had apprehension about the changes in the Indian Patent Act as per the TRIPS Agreement.

(Financial Express, 30 May 2000)

India has won a major battle recently when the opposition division of European Patent Office

Contd on...14

**Do not publish your invention without first filing a patent application**

Contd from...2

### Patenting in Materials...

application for enhanced adherence of diamond coating. The other 8 applications of Widia relate to CVD coating of thermally treated substrate, production of composites mixtures, ceramic brush for powder compaction, manufacture of electro magnet compact, surface modification of the hard metal to get wear resistant layers in the sintering process. Carborundum Universal Ltd. has most of the applications related to preparation of abrasive grains of improved electrical projectability.

ISRO's applications are for anodizing of aluminum and its alloys, hydrothermal production of active copper oxide and manufacturing ceramic whisker preforms. Indian Association for Cultivation of Science has 4 applications for double junction amorphous silicon solar cell, boron doped hydrogenated amorphous silicon, highly conductive phosphorus doped n-type and p-hydrogenated microcrystalline silicon carbide film. 4 applications by Department of Science and Technology include manufacture of an improved solid carbon, processing of carbon ceramic composites, preparing w-type hexagonal ferrite and preparation of silver-metal oxide composites powders and articles. Institute for Plasma Research has 2 applications for nitriding and one

for a process for producing zirconia from zircon sand. BHEL's applications are for making honey comb substrates by extrusion, volumetric material feeder, ceramic substrate for catalytic converter and hard surfacing of superalloys using CO<sub>2</sub> laser. Murata Manufacturing Company Ltd. has 2 applications for semiconductive ceramic and one for barium titanate series semiconductor porcelain composition. International Advanced Research Centre has filed all the three application for a process for preparation of reaction bonded silicon carbide.

Centre for Materials for Electronics Technology has 2 applications related to preparation of barium titanate and solderable type double coat ohmic contact conductor composition. Hindustan Development Corporation Ltd. has one application for a method for producing wear resistant steel members used in rail. Hindustan Organic Chemicals Ltd. has a single application for treatment of spent noble metal catalyst for reuse. Indian Aluminum Company Ltd. has 2 applications for production of high reflectance alumina hydrate and new composition of matter suitable for use as flux alloy steel.

Paramount Sinters Pvt. Ltd. has filed 2 applications for simultaneous reduction and agglomeration of manganese ore fines and continuous casting of ferro-alloy into shaped product

Contd on...15

contd from...13

### Domestic News

completely revoked the patent granted to the United States Department of Agriculture and WR Grace for a fungicide derived from the seeds of the neem tree. The patent has been revoked on the basis of absence of an inventive step involved in the patent. The case began five years ago when Vandana Shiva of Research Foundation, International Federation of Organic Agriculture Movements (IFOAM) and Mag da Aelvoet, Environment Minister of Belgium filed the case.

Indian Government has filed a challenge in the US Patents and Trademarks Office against the Texas based Rice-Tec for its patent on new basmati lines. India has objected to Rice-Tec calling the new strain as basmati and has challenged on three claims.

**(Economic Times, 17 June 2000)**

A project worth Rs.1000 crore for five years is in the offing, for the comprehensive development of medicinal plants in the country. This was informed by the Union Minister of Health and Family Welfare Dr. C.P Thakur. The creation of a traditional knowledge digital library has also been taken up in order to prevent patents being filed for medicinal use of plants, which have been in traditional use for centuries.

**(Financial Express, 1 June 2000)**

*Incremental inventions can lead to new patents*

*Contd from...14*

### **Patenting in Materials...**

and equipment thereof. Thapar Corporate Research and Development Centre, Patiala has 2 applications for manufacture of silver tin oxide electrical contact materials for switch gears and manufacture of copper chromium electrical contact material for vacuum interrupters. Indian Institute of Science has an application for making aluminum matrix composites by pressureless infiltration of liquid metal. One application has been filed by Department of Electronics (now Ministry of Information Technology) for preparation of strontium titanate powder.

66 applications by Indian individuals relate to steel processing, manufacture of activated zinc oxide from zinc ash and waste by wet process, process for making steel in electric arc furnace using molten high carbon ferrous metal, process for making ferrite powder, low phosphorous steel, zirconium and hafnium from monazite sand, manufacture of composites from different materials, high strength pre-stressed beams for long spans, device for depositing thin films of metals and non metals, a bio-ceramic material and many more areas.

### **Foreign Scenario**

Siemens Aktiengesellschaft ranks second after India's CSIR

with 33 applications to its credit. These relate to process and apparatus for coating a metal strip, method for removing tin, process for producing dispersion hardened copper by mechanical alloying, super alloy component with a protective coating system, process and apparatus for the directional solidification of a melt for turbine blade and sintered contact materials. Voest-Alpine has most of the applications related to extraction of iron from iron ore and related processes and process for producing sponge iron.

El Du Pont de Nemours has 18 applications which concentrate on pyrophosphate catalyst precursors, improved electrodes, metal-oxygen carbon filled emitters, hydro-metallurgical extraction process, flowable materials, electrode for use in membrane electrolyzers, process for making field emitted cathode, diamond powder field emitters and nickel catalyst composition. Widia GMBH has applications for composites body, cermet and process for its production, hard metal or cermet sintered bodies and metal cutting operations. Engelhard Corporation has filed applications for improved nickel and other catalysts

Institut Francais Du Petrole has applications mainly for catalysts. Emitec Gesellschaft Fur Emissions Technologie MBH has its 10 applications for extruded honey comb body and

one for electrically heatable catalyst. Mannesmann Aktiengesellschaft has filing in the area of steel. These include production of stainless steels, production of foundry pig-iron with high silicon content, metallurgical vessel, process and apparatus to cool molten steel and method and plant for producing steel strip with cold rolled properties.

Metallgesellschaft Aktiengesellschaft has applications related to sponge iron, treatment of granular iron and preparation of alumina. BASF Aktiengesellschaft has filed applications for multi-metal oxide materials, preparation of phosphorus doped silver catalyst, high purity ferromagnetic iron oxide pigments and preparation of supported transitional metal catalyst. Corning Inc has applications for sealing materials used in CRT, aluminosilicate glass for flat panel display method and apparatus for forming fused silica by combustion of liquid reactants, method of fabricating silicon oxynitride, process for preparing glasses with very high refractive index, binder for ceramic and refractory materials and method for forming silica glass. There are more than 30 foreign companies who have filed applications which are less than 10 in number.

*Maintain a log book of your research and experiments*

## Readers' Forum

The recent announcement that scientists have succeeded in decoding 97% of the human genome has led to great expectations. And why not? People of the world are anxiously waiting for the cures of diseases like Alzheimer and Parkinson's. The euphoria is well justified and the achievements of scientists duly deserve to be written in golden letters. There is a side of this jubilation, which is saddled with some questions (usually branded as ethical questions) and which occupy the centrestage from time to time. What from these discoveries and inventions will get patented is not known as yet. But patenting at certain levels may not be ruled out either. PFC has collected the questions raised in the press and elsewhere and these are being published for our readers.

- 1 How far should we go, in tinkering with genes themselves, the very stuff of life?
- 2 Will it spur a clamor for the perfect baby?
- 3 Will applications, when available, be out of reach of poor?
- 4 Should the products of human genome be patented or commercialised?
- 5 Do private companies have the right to patent the data emerging from the human genome project?
- 6 Should employers, life insurance companies or mortgage lenders have access to our gene file? They may not consider those cases, which are susceptible to disease or weak health or early death.
- 7 Will it lead to discrimination based on the genetic code of a person? Will this create a

situation of no place for the less intelligent, mentally or physically challenged?

- 8 Will individuals with an enhanced genetic inheritance be favoured over other individuals? For example memory or intelligence may be enhanced; this facility may be available to the rich or powerful by genetic modification.
- 9 Genetic engineering may help in increasing the productive life of humans. In such a scenario, would we be able to:
  - (a) provide jobs and resources for the increasing number of people?
  - (b) manage the generation gap?
  - (c) manage intra-family equation?
- 10 How will one maintain ones genetic privacy?
- 11 Knowledge of genetic make up would predict the oncoming diseases or even death. Would it lead to an increase in the number of suicides?
- 12 It could lead to pressures on parents to abort fetuses that do not pass quality test?
- 13 New drugs are expected to lead to profits. Who should be the shareholder in the profit - the person who made the gene discovery or the drug developer or the person whose blood was taken to determine the specific gene?
- 14 Will genetic testing in pre implantation embryos be dangerous?
- 15 How to deal with genetically engineered biological weapon to target specific race?

Readers are requested to send their views on these questions/issues which may be considered for publishing in the IPR Bulletin. ***Do you really think such questions are worth raising?***

---

**Please send us questions and topics you would like to see in the coming issues**

### **NEXT ISSUE**

- **Patenting Electricals** in
- **Case Study**
- **Patents for Opposition**

#### **Published by: Patent Facilitating Centre (PFC)**

Technology Information, Forecasting and Assessment Council (TIFAC)  
Department of Science and Technology (DST),  
Technology Bhavan, New Mehrauli Road, New Delhi - 110 016.

Tel.: 6859581, 6863877, 6967458, 6567373 Fax: 6863866

e-mail: tifac@nda.vsnl.net.in website: www.indianpatents.org and www.tifac.org.in

**Adviser:** Y.S. Rajan, Executive Director, TIFAC

**Editor:** R. Saha, Director

Printed by Reliant Print O Graphics, New Delhi-110 020

Telefax: 692 4567, 692 9593

**Visit us at [www.indianpatents.org](http://www.indianpatents.org)**