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WTO's Third Ministerial Conference

The third Ministerial Conference of the World Trade Organisation (WTO) will be held in Seattle, Washington from 30 November - 3 December 1999. The Ministerial Conference is WTO's highest-level decision making body. As required by the Marrakesh Agreement establishing the World Trade Organisation, the Ministerial is supposed to meet at least once every two years. The second Ministerial Conference was held in Geneva in May 1998. United States Trade Representative Charlene Barshefsky will chair the Seattle meeting. He has described the Seattle meet as the largest trade event ever held in the United States. The participants include representatives from 134 Member Countries, 34 Observer Nations and various NGOs all over the world. After the launch in Seattle, the actual negotiations and work programmes will take place in Geneva, where WTO is located. The Ministerial will launch major new negotiations to further liberalize international trade and to review some current trade rules. It will also set in motion a work programme to look at other important issues. The Seattle Ministerial Conference will mark the beginning of the negotiations, just as the seven year Uruguay Round was launched at a Ministerial meeting in Punta del Este in 1986 and the six year Tokyo Round was launched in Tokyo in 1973. Many countries have suggested a dead line of three years for these new talks.

The basic agenda of the Ministerial enunciates negotiations on the Agriculture and the Trade in Services agreements as reached in the Uruguay Round and reviews of some of the key provisions in other Uruguay Round Agreements. Another challenge that is being seen for the conference is whether to include in the negotiations, 'new issues' which cropped in the world economy after the Uruguay Round of negotiations. The new issues include investment, competition policy, transparency in government procurement and trade facilitation. Issues like e-commerce, Internet, genetically modified organisms are also to be debated. Another nab for debate in this Ministerial is whether Seattle should launch a large and comprehensive round offering trade-offs and benefits or a narrow and focussed negotiation. Which approach will involve less time and avoid a seven-year marathon like the Uruguay Round, shall be debated. The conference also aims at integrating the developing countries into the trading system by providing them access to the decision-making process in the WTO, access to policy advice, access to capacity building and access to global markets.

Developing countries have identified a number of problems relating to the implementation of existing commitments, including some of those in the Uruguay Round agreements. The problems, which are being raised, include high levels of protection and support of agriculture in industrialized countries; continued high tariffs, tariff peaks and tariff escalation in the field of industrial tariffs; and lack of meaningful liberalization in textiles and clothing. It is being strongly argued that existing commitments should be fully implemented before starting negotiations on new ones, and that the implementation of existing commitments should not be "paid for" in negotiations. Substantive problems like the tariff issues are likely to be resolved only through global negotiations and there is in fact very strong support for

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the proposal that negotiations on industrial tariffs should accompany those on agriculture and services.

The member countries have sent more than 150 proposals for discussion during the Ministerial. These include tariffs, anti-dumping, subsidies, safeguards, investment measures, trade facilitation, electronic commerce, competition policy, fisheries, transparency in government procurement, technical assistance, capacity building and other development issues, intellectual property protection. Many other subjects in addition to agriculture and services are likely to be taken up. There are proposals to produce a special deal to help the least developed countries (LDCs) gain easy access to richer countries' markets and to develop further work on technical assistance to LDCs under an integrated framework set up by the WTO and a number of other organisations in 1997. Another agenda item includes bringing of China, Russia and 29 other candidates into the WTO family with a view to making the global trading system truly global. Table 1 lists the proposals on different subject areas sent by various member countries to the WTO.

Table 1

Areas Open for Discussions	Proposals Received From
Electronic Commerce	Cuba, Venezuela, Australia, Canada,European Communities, Japan, Singapore, Indonesia
Trade In Services	Cuba, Australia, Brazil, Colombia, USA, Singapore, Turkey, Switzerland, Japan, Argentina, Norway, European Communities
Implementation Issues from the Uruguay Round	Cuba, Dominican Republic, Honduras, Egypt, El Salvador, India, Indonesia, Malaysia, Nigeria, Pakistan, Sri Lanka, Uganda, Argentina, USA
Anti-Dumping	Chile, Guatemala, Colombia, Brazil, India
Subsidies & Countervailing Measures	Canada, Colombia, Brazil
Investment Measures	European Communities, Hongkong, China, Switzerland, Korea, Japan
Trade Facilitation	European Communities, Switzerland, Korea, Japan, USA
Competition Policy	Norway, Japan, Korea, Kenya on behalf of African Group, Turkey
Fisheries & Forestry	Korea, Australia, Iceland, New Zealand, Norway, Peru, Philippines, USA, Iceland, Japan
Transparency In Govt Procurement	European Communities, USA
Technical Assistance/ Capacity Building	Bangladesh, Lesotho, Nigeria, Senegal, USA, Zambia, Kenya on behalf of African Group, Canada, Denmark, Netherlands, Norway, Sweden, Switzerland, European Communities
TRIPS/IPR	Colombia, Venezuela, Hungary, CEFTA Countries, Latvia, Canada, Turkey, Japan, European Communities, , Kenya on behalf of African Group, India
Agriculture	Cuba, Dominican Republic, Egypt, El Salvador, Honduras, Sri Lanka, Uganda, Zimbabwe, Australia, New Zealand, Colombia, Romania, USA, Czech, Hungary, Slovak Republic, European Communities, Bulgaria, Latvia, Slovenia, Japan
Biotechnology	Canada, USA
Genetically Modified Organisms	Japan
Balance Of Payments	India
Technology Transfer	India
WTO & Transparency	Canada
Trade Related Investment Measures (TRIMS)	Mexico, Colombia, Brazil
Differential & Most Favourable Treatment	India, Indonesia, Malaysia, Philippines, Thailand, Australia
Duty Free Access For Least Developed Countries	European Communities
Non-Agricultural Market Access	European Communities, USA
Safeguards	Colombia
Traditional Knowledge & IPR	Bolivia, Colombia, Ecuador, Nicaragua, Peru

India has submitted many proposals to WTO for consideration in this Conference; highlights of some of these are given below.

Anti-Dumping Measures

The proposal states that anti-dumping measures are virtually being used as weapons by certain developed countries to deny access to the products of developing countries. On the same commodity anti-dumping action has been repeatedly

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initiated by certain developed countries. This has created instability and unpredictability in the market, which militates against basic GATT principles. It is vitally important to lay down clear guidelines for making sure that the provision in Article 15 of GATT, 1999 is translated into practice. *(WTO Document : WT/GC/W/108;13.11.98)*

India along with some other developing nations, namely Cuba, Dominican Republic, Honduras, Egypt, El Salvador, Indonesia, Malaysia, Nigeria, Pakistan, Sri Lanka and Uganda, has proposed the following with regard to anti-dumping:

1. In order to restrict the initiation of back-to-back investigation, no investigation shall be initiated for a period of 365 days from the date of finalization of a previous investigation for the same product resulting in non-imposition of duties.
2. The lesser duty rule shall be mandatory while imposing an anti-dumping duty against a developing country Member by any developed-country Member. There shall be an undertaking to this effect under Article 9.1.
3. Article 2.2 shall be clarified so that where sales on the domestic market do not permit a proper comparison, the margin of dumping is determined by comparison with the export price to a third country, and only where this is not representative should the export price be determined on the basis of the constructed value of cost of the product in the country of origin.

TRIPS

Along with these countries India has also flagged its concern for the TRIPS related reforms and has proposed the following changes to be done in the TRIPS Agreement:

1. In the light of provisions contained in Article 23 and 24 of the TRIPS Agreement, additional protection for geographical indications shall be extended for products other than wines and spritis.
2. It is widely agreed that the TRIPS Agreement is incompatible with the Convention on Bio-Diversity. Pending a thorough examination of this issue, a clear understanding in the interim that patents inconsistent with Article 15 of the CBD shall not be granted.
3. Article 64, paragraph 2 shall be modified so as to make it clear that subparagraph (b) and (c) of Article XXIII of GATT 1994 shall not apply to the TRIPS Agreement.
4. The provisions of Article 66.2 shall be made obligatory and shall be subject to periodical notification, in order to monitor their effective implementation. Guidelines on categories of incentives shall also be established. The application of this Article shall be extended to all developing countries.
5. The period given for implementation of the provisions of Article 27.3(b) shall be five years from the date the review is completed.
6. The list of execptions to patentability in Article 27.3(b) shall include the list of essential drugs of the World Health Organisation (WHO). *(WTO Document: WT/GC/W/354;11.10.99)*

Another concern for India is the protection of indigenous knowledge which risks being used by patent holders in developed countries without the flow of benefits from patentees to the original developers. *(WTO Document : WT/GC/W/114;18.11.98)*

Technology Transfer

India's proposal on transfer of technology has suggested establishing a Working Group to identify the problems and constraints faced by developing countries in gaining access to the latest technology available in the developed countries, to look at all the existing WTO Agreements and suggest specific measures. This proposal has posed certain questions for which answers have to be found :

Does the control, direction and use of technology:

(a) promote innovation and sharing of knowledge;

(b) restore social balance or concentrate power in the hands of a few;

(c) favour profits or precaution;

(d) bring benefits for the many or profits for the few;

(e) respect diverse systems of property ownership;

(f) empower or disempower people; and

(g) make technology accessible to those who need it in developing countries. *(WTO*

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Document: WT/GC/W/ 352;11.10.99)

Balance of Payments

The proposal states that the Balance of Payments Committee should be requested to examine all the issues that arise from the provisions of Article XVIII:B and the 1994 BOP Understanding, read along with Article XV of the GATT, and should be mandated to submit its report to the General Council in a time-bound manner. Its examination should include: (I) the jurisdiction of the Balance of Payments Committee and the General Council; (ii) all aspects relating to the criteria for assessing the adequacy of reserves and the justification for import measures; and (iii) the scope and applicability of the proviso to Article XVIII:11 and Note Ad Article XVIII:11. *(WTO Document: WT/GC/W/364;12.10.99)*

Besides these, India has also raised issues relating to Agriculture, Textiles, TRIMS, Subsidies and Countervailing Measures, Sanitary and Phytosanitary Measures, Technical Barriers to Trade, Services, Special and Differential Treatment and Dispute Settlement within WTO countries.

Infact the Seattle Ministerial shall be gearing the world for the next millenium. In the words of Mike Moore, Director General, WTO,

"The list of issues is already longer than the Uruguay Round agenda and many of the new issues reach inside borders, raising complex questions about the way economies are organized in an integrated world. The number and diversity of interests is also larger. No longer a cosy club of industralized countries, the WTO is a global system of 135 members with China, Russia and 29 other economies queuing to join. There may be 100,000 protestors outside the conference centre but there are 1.5 billion people wanting to join our organization".

"What is at stake in Seattle? It goes beyond markets for our exports. It is about delivering better living standards for everyone, better outcomes for the environment, more resources for health and education. It is about building a stronger global economy, reducing the risk of future instability and crisis. Perhaps above all it is about advancing a new approach to international cooperation based on rules, not power rules to help manage the powerful forces of globalization for everyone's benefit, the weak as well as the strong.

"Seattle is the priority, but the Seattle Ministerial will only be judged a success if there is a balanced outcome. We need to assist all member governments to engage in the process. Thus we need to increase the levels and focus of technical assistance from the WTO and other sources to make this happen.

(Source : All the information in this article has been collated from the WTO website : www.wto.org)

E-Commerce Patents May Force Reconsideration of Strategies

It is reported that a recent proposal by EU could make computer software patentable in Europe for the first time. This would imply that businesses may soon have to pay royalties on such commonly used e-commerce techniques as compression, watermarking, encryption and clearing house technologies, creating significant cost consideration for e-commerce strategies. Keeping in view the imminent transformation that the EU directive could bring to the future of e-commerce in Europe, a survey was undertaken by Derwent (the famous database company specialising in patent information), to investigate the attitude of British business to potential changes in e-commerce patent legislation. The survey reveals that many patent applications related to e-commerce may raise some heat and controversies. The basic reason is that most of the patents granted or in application stage are very broad in nature. This would suggest that almost any company engaging in e-commerce may have to pay royalties on the technologies employed. In addition it is felt that the Internet is progressing too fast for patent offices to fully appreciate the implications of patents they grant.

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E-Commerce Patent...

Sixty companies were interviewed in retail, pharmaceutical and financial sectors to provide a snapshot of the current status. 35% of the companies polled were aware of the planned legislative changes due to e-commerce and 80% of these companies hailed from the financial sector. Approximately 87% of respondents in the financial sector had an e-commerce strategy in place compared to only 26% of respondents in the retail sector. Overall 70% of those interviewed said they had an e-commerce strategy, although they admitted that these were in their early stages. Only 14% had a strategy in place for six months and 30% for a year. The poll also indicated that the e-commerce programmes were handled by IT Director (31%), CEO (19%), Board Member (13%), Marketing Director (6%) and e-commerce manager (13%). Further 65% of the total polled were interested in learning more about e-commerce patents, especially about ownership of these patents and their effect on the business. In the words of the Managing Director of Derwent, Mike Tansey, " This research indicates that, at present, developing and implementing an e-commerce strategy is the responsibility of a diverse group of people within organisations, many of whom may not be aware of the effects of changing patent legislation. There is a danger that companies will be caught out and face unexpected bills for royalty payments".

(Source : Derwent Information, Volume 8 No. 3)

Book Review

Handbook of Indian Patent Law & Practices; N.R. Subbaram Published by S. Viswanathan Private Limited Rs. 750

The patent awareness in India has been on the rise in the last 4-5 years. With the scientists and technologists taking more interest in this technolegal subject, a need has been felt to devise means which can inculcate interests of the scientific community in this area. Shri Subbaram was responsible for steering the patent movement in CSIR and he therefore understands the need of the researchers. He has therefore competently included most of the aspects about patenting required to be understood by researchers, policy makers etc, thus reducing the general gap in knowledge. For the beginners this book is of immense help as it has covered the basic philosophy of intellectual property rights, international character of the patenting system, international conventions and treaties, the Indian Patents Act and the Patent Rules. A section of the book also deals with TRIPS, GATT, and Uruguay Round of negotiations, which are to be understood by all the practitioners of patents for appreciating the philosophy behind the patenting system. The interpretation of various sections of the Patent Act has been dealt in a very simple and lucid manner. The self-assessment questions at end of every chapter tend to clarify the doubts often confronted by the scientists. One can be sure of one's broad knowledge about patents if these exercises are completed successfully.

Since India joined the Patent Cooperation Treaty and Paris Convention on December 7, 1998, many procedural changes have taken place. The book has incorporated all the changes that have taken place with regards to the PCT. The book also provides detailed information on the Indian Patent Office; its working and the procedures being followed there. The significance of the book is that the author has taken care to provide information about the other contemporary sources of patent information available in the country at that point of time like the information on Ekaswa-A and Ekaswa-B, CD-ROMs brought out by PFC on Indian patents. The book will be a good addition to libraries of industries, R&D institutions and government departments.

Case Law on Copyright Infringement of Software

Microsoft Corporation Vs Plato Technology Limited

The case presented here refers to the copyright suit filed by the software giant Microsoft Corporation against Plato Technology Limited for infringing the Windows 95 software. The defendant is a small company in comparison with the plaintiff and carried the business of supplying computer hardware to computer assemblers. It all started in October 1997 when the defendant supplied five copies of the plaintiff's Windows 95 software. These five copies obtained from M/s Agency were found to be counterfeit. The plaintiff, upon disclosure of the fact that the defendant had been selling counterfeit software, initiated the copyright infringement case against the defendant in June 1998. Plato undertook not to deal further in counterfeit software. Following Plato's attempt to strike out action in December 1998, Microsoft sought summary judgement. Plato's undertakings still stood and were not challenged by Microsoft. Therefore, the main question for the court was to determine the extent of the relief to be granted to Microsoft for relatively minor and unintentional infringement of its rights. The plaintiff had claimed that, in spite of the minor nature of the infringement, they were entitled to: -

1) a wide-ranging injunction against the defendant which shall restrain further infringement in any of its software products;

2) delivery of all copies of the Microsoft software in possession of the defendant; which it knows to be counterfeit.

3) damages or an account of profits in respect of all counterfeit Microsoft software products Plato has ever dealt in; and

4) extensive discovery of all dealings e.g. goods obtained and related documentation, in all Microsoft products from the defendant.

The defendant put forward the following arguments:-

1. As there was no evidence that they intended to continue infringing, any injunctive relief ought to be narrow and restricted to what the defendant had already offered in their undertaking. (The undertaking was that they would no longer deal in software known to be counterfeit).

2. Microsoft was entitled to damages in respect of 45 copies of Windows 95, which the defendant had obtained from that agency.

3. Any order for discovery should be restricted to those 45 copies.

The court looked into all the aspects and gave its judgement on each of the points raised by Microsoft.

(a) The main principle adopted by the court was derived from the judgement in Coflexip SA vs Stolt Comex Seaway MS Ltd. in which it was clarified that the court must 'tailor the injunction to match the wrong', that the injunction must protect the plaintiff but be fair to the defendant as well. In the present case the only threat was that Plato might occasionally buy software purporting to be genuine Microsoft product. Since restricting any trader to buy from non-authorised distributors would be an unreasonable restraint of trade for a trader, the court held that it should be incumbent on the honest trader to check that the products he buys are genuine. Any injunction or undertaking should nevertheless extend to all Microsoft software products.

(b) Plato should deliver all copies of Microsoft software in its possession, which it knows to be counterfeit. There was no evidence or inference that Plato had obtained any counterfeit Microsoft software otherwise than from Agency. Consequently, any relief had to be limited to those goods conceded by Plato.

(c) The discovery at Plato's place should be restricted to documentation dealing with the goods obtained from Agency only, since Plato was an honest trader unaware of the counterfeit nature of goods and not recklessly indifferent.

The court ultimately held that a narrow relief would be more appropriate to the present circumstances where Plato was an honest trader unaware of the counterfeit nature of goods and not recklessly indifferent.

(Source: Intellectual Property Decisions, Published by Monitor Press Ltd, Suffolk House, Church field Road Sudbury, Suffolk CO 10 6YA, May 1999)

Case Study

Method and apparatus for bioremediation of mixed hazardous wastes

The present invention provides a method and apparatus for treatment (bioremediation) of mixed hazardous wastes. The same can be used for treatment of a liquid or slurry hazardous waste stream like industrial wastewater or sludge or for treatment of contaminated groundwater. The invention was granted a patent in US July this year (Patent No. US 5922204) to two individuals. The US Government has certain rights in the invention, as it emanated from a project supported by the Defense Advanced Research Projects Agency, a component of the U.S. Department of Defense.

The Background

The activities of U.S. Department of Defense and its contractors result in the generation of large amounts of hazardous wastes. Many of the constituents of concern are waterborne or have become waterborne as a result of leaks or spills. Among the most troublesome of these wastes are organic solvents, heavy metals, acids and salts. Even at low concentrations, these constituents are often toxic, tend to be resistant to conventional treatment methods and are persistent in the environment. The patent is an offshoot of the attempts made to handle such hazardous wastes. Common waste constituents are aromatic hydrocarbons, such as benzene, toluene, ethylbenzene, xylenes, phenols and cresols, halogenated (e.g. chlorinated) hydrocarbons, such as tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane and similar xenobiotics, heavy metals such as copper, lead, zinc, lead, mercury, cadmium, and chromium, acids such as sulfuric acid and nitric acid, and salts, such as sulfates and nitrates. Benzene, xylene etc are components of fuels and often the focus of groundwater clean up efforts. Phenols and cresols are used in paint stripping and carbon (smut) removal operations. Halogenated hydrocarbons are used as solvents and vapour degreasing operations. Heavy metals, acids and inorganic salts are present in metal stripping and electroplating effluents.

The Prior-Art

The US Patent No 5, 076, 927 had described the concept of kinetic control for bioremediation of mixed hazardous wastes. The kinetic control method is applied to enrich the particular micro-organism or consortia that is capable of accomplishing the hazardous waste transformations. The enrichment is achieved through a series of reactors. Growth rate (dilution rate or mean cell residence time (MCRT)) is used to favour particular microorganisms and disfavour others. In general downstream reactors are operated at greater MCRT than upstream reactors. There is a practical limitation on the use of kinetic control for enrichment purposes. A good engineering design calls for a safety factor to be applied to the minimum mean cell residence time (MCRT). It is recommended that a design MCRT should be 2 to 10 times the minimum MCRT that causes washout of the desired microorganisms. Thus from a practical perspective, use of kinetic control is feasible only in those cases wherein the, maximum specific growth rates of organisms to be separated differ by a factor of 2 to 10.

Methods for culturing microorganisms, and, specifically, for culturing sulfate-reducing bacteria and methane-producing bacteria in at least two reactors in series, are known. The invention provides a method for neutralizing and removing metals and sulfate from acid mine drainage and other acidic metal sulfate solutions. Sulfate is used as the sole electron acceptor in the biological reduction process. The electron donors are volatile acids or their disassociation products, such as propionic acid, propionate ion, butyric acid, butyrate ion, lactic acid and lactate ion.

The Present Invention

Applicants have discovered that the methods in the referenced patent can be used to biologically oxidize aromatic hydrocarbons as electron donors and to biologically reduce halogenated hydrocarbons as electron acceptors. This is achieved by

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Case Study

replacing electron, such as propionic acid, propionate ion, butyric acid, butyrate ion, lactic acid and lactate ion with aromatic hydroarbons such as benzene, toluene, ethylbenzene, xylenes, phenol and cresols.

Fig. 1 is a schematic block diagram illustrating a third preferred embodiment of the invention, the dashed lines representing possible variations in the process. Mixed hazardous waste 50 is input to the process by pump 62. The process involves an initial sulfate-reduction step and a subsequent methanogenic step. A third, aerobic processing step may also be included.

The initial sulfate-reduction step is accomplished in the first reactor 52. Conditions for biological sulfate reduction are created whereby sulfate serves as the primary terminal electron acceptor. If the waste stream does not contain sulfate, addition of sodium sulfate 51 (or sulfuric acid) is necessary. An anaerobic environment is maintained automatically by the culture's production of hydrogen sulfide. Reductive dechlorination produces ethylene (63) and other breakdown products.

From the reaction stoichiometries, the following sulfate 51 requirements are predicted if addition of an electron acceptor is necessary:

Electron donor	Sulfate requirement	
	Moles of SO_4^{++} required per mole of electron donor	Grams of SO_4^{++} required per gram of electron donor
Benzene	3.75	4.61
Toluene	4.50	4.69
Ethylbenzene	5.25	4.75
Xylenes	5.25	4.75
Phenol	3.50	3.57
Cresols	4.25	3.78

The above information on sulfate requirements can be used to determine an appropriate amount of sulfate ion to be added to the second reactor 52

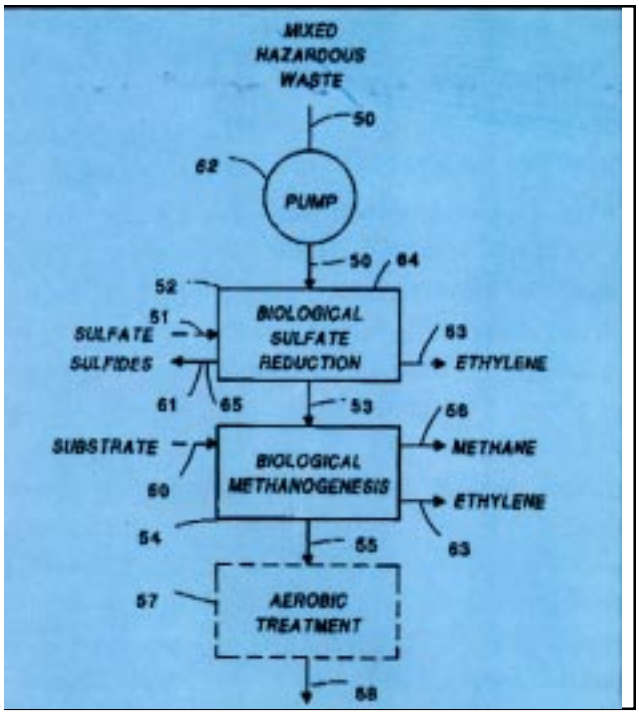

Fig. 1

to enrich sulfate-reducing bacteria therein without enriching sulfate-reducing bacteria in downstream reactors. Degradation of aromatic hydrocarbons such as p-cresol occurs under sulfate-reducing conditions. Free energy considerations indicate that degradation of other such compounds, such as toluene and phenol, is favorable thermodynamically.

If the excess hydrogen sulfide (H_2S) produced during sulfate reduction is removed from the reactor (by purging with nitrogen or otherwise), the pH of the solution is increased. Any conventional method is used to recover sulfur from the stream.

Sulfate 51 may be added or it may be present in mixed hazardous waste 50. Hydrogen sulfide gas (e.g., sulfides 61) may be removed from first liquid effluent 53 using one of the methods described above. In one embodiment, first reactor 52 includes headspace 64 from which hydrogen sulfide gas 61 is removed by vacuum pump 65. Waste hydrogen sulfide gas 61 may be scrubbed to remove volatile hydrocarbons contained in it by contacting it with an aqueous waste stream, such as a portion of third liquid effluent 58, which portion is returned to first or second reactor 52 or 54 for further treatment. Biological dechlorination of

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Patents for Opposition

The following patent applications have been accepted by the Patent Office and published in the Gazette of India. These can now be opposed by filing opposition applications within a period of four months from the dates given. Six digit numbers allotted after acceptance by the Patent Office are given before the applicant names and patent application numbers given in brackets. Names of the branches of the Patent Office are denoted in the application number, e.g. 'Bom' for Bombay branch. An opposition application should be submitted at the appropriate office where the concerned application was originally filed.

PATENT APPLICANTS	INVENTION
C. 14 August, 1999	
182931. Daewoo Electronics Co Ltd, Korea (247/Cal/95)	Thin film actuated mirror array for use in an optical projection system & method for the manufacture thereof.
182932. Foster Wheeler Energy Corp, USA (548/Cal/95)	An apparatus & method of producing flue gases with reduced NO level.
182933. Tyco Flow Control Inc, USA (622/Cal/95)	A valve assembly having improved valve seat.
182934. Daewoo Electronics Co Ltd, Korea (874/Cal/95)	An apparatus for processing a still screen in a digital video reproducing system.
182935. Indian Association for the Cultivation of Science, Calcutta (924/Cal/94)	A continuous growth process for the preparation of hydrogenated amorphous silicon.
182936. Technological Resouces Pty Ltd, Australia (979/Cal/94)	Improved process for the production of iron from ferrous raw materials.
182937. Indian Jute Industries Research Association, India (989/Cal/94)	Electronic oil content meter.
182938. E I Du Pont De Nemours & Co, USA (567/Cal/97)	A process for producing dry alkali metal aryloxide.
182939. Jatinder Kumar Aray, & E P Industrial & Agro Chemicals Pvt Ltd, India (1452/Cal/97)	An improved process for producing carboxy methyl cellulose continuously.
182940. Eli Lilly & Co, USA (1549/ Cal/97)	A process for preparing an amorphous form of benzothiophenes.
182941. Hindustan Lever Ltd, India (532/Bom/94)	Process for the production of a high bulk density detergent composition.
182942.Prestige Hm-Polycontainers Ltd India (569/Bom/94)	A pilfer proof container.
182943. Prabha Engineering Private Ltd, India (190/Bom/95)	A motorised jack device.
182944. Searle (India) Ltd, India (564/Bom/97)	A process for the preparation of the antipsychotic agent 3-[2-[4-(6-fluro-1 2-benzisoxazol-3-yl) -1- piperidinyl] ethyl]-6 7 8 9-tetrahydro-2-methyl 4h pyrido [1 2a] pyrimidin-4-one (risperidone).

International News

In a deal to settle patent litigation, Storage Technology (or commonly known as Storage Tek), high-volume data storage equipment maker has agreed to pay $100 million to communication equipment maker Odetics Inc. $ 80 million has been paid at the time of settlement and the remainder would be paid in equal instalments of $ 10 million each in the next two years.

(Business Line, 12 Oct 99)

As on July 15, 1999 54 countries are members to Madrid Agreement, namely Albania, Algeria, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Cuba, Czech Republic, Democratic People's Republic of Korea, Egypt, France, Germany, Hungary, Italy, Kazakhstan, Kenya, Kyrgyzstan, Latvia, Lesotho, Liberia, Liechtenstein, Luxembourg, Monaco, Mongolia, Morocco, Mozambique, Netherlands, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Sierra Leone, Slovakia, Slovenia, Spain, Sudan, Swaziland, Switzerland, Tajikistan, the former Yugoslav Republic of Macedonia, Ukraine, Uzbekistan, Viet Nam, Yugoslavia, Georgia, Turkey and Turkmenistan.

(www.wipo.org)

A 1996 Update Report on US Patenting by Women released by United States Patent and Trade Mark Office (USPTO) presents a brief history of women inventors in United States and examines

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182945. Ganesh Benzoplast Ltd, India (662/Bom/97)	A process for preservation of perishable foods typically seafoods.
182946. Dr Bakulesh Mafatlal Khamar, India (699/Bom/99)	The process for manufacturing formulation of topical beta blockers with improved efficacy.
182947. Department of Atomic Energy Government of India, Anushakti Bhavan, Chatrapati Shivaji Maharaj Marg, Mumbai (236/Bom/98)	A process for the preparation of the anticancer drug n[4- {[2 4-diamino-6-pteridinyl) methyl] methylamino} benzoyl]-l-glutamic acid company known as methotrexate & pharmaceutically acceptable salts thereof.
182948. Sellers Edward M, Canada (466/Bom/98)	A process of preparing a synergestic pharmaceutical composition for prohylaxis or treatment of cancer.
182949. M/S Kumkum Food Products Ltd, India (492/Bom/98)	Process & device for instant sterilization of food cereals pulses & the like.
182950. Sonic Biochem Extractions Pvt Ltd, India (614/Bom/95)	A process of developing dietary fibre from soya hull.
182951. Discovery Communications Inc, USA (1010/Cal/94)	An operation centre for a video-audio program delivery systems.
182952. Fiberweb North America Inc, USA (1013/Cal/94)	A gamma radiation sterilizable composite non-woven fabric.
182953. Bernd Hansen, Germany (87/Cal/95)	An infusion container with two connections.
182954. Auto Electronics Corp, Korea 333/Cal/95)	Sensor system for controlling ventilation systems in vehicles.
182955.Mitsubishi Cable Industries Ltd, Japan Missing In The F	An apparatus for electrically testing a multicore cable.
182956. Philips Electronics N V, The Netherlands (368/Cal/95)	An optical switch for a multiplex transmitting & receiving system.
182957. Connector Systems Technology N V, The Netherlands (464/Cal/98)	Installation fixture for right angle electrical connector assembly.
182958. ABB Patent Gmbh, Germany (662/Cal/95)	A brake device for rail vehicle.
182959. Krone Aktiengesellschaft, Germany (724/Cal/95)	Terminal element.
182960.Sterner Mark Henry & Zane Ronald Sui,USA (1921/Cal/97)	A process for producing reconstitutable dehydrated whole lentils.
182961. Rashtriya Chemicals & Fertilizers Ltd, India (192/Bom/95)	A process for manufacturing a slow release urea fertilizer by nitrification inhibition.
182962. Bhabha Atomic Research Centre India (209/Bom/95)	A process for the enzymatic liquefaction of unconventional fruits.
182963. Filterwerk Mann + Hummel Gmbh, Germany (235/Bom/95)	Method of producing a hollow body with an internal supporting frame & a hollow body produced thereby.
182964. Philips India Ltd, India (242/Bom/85)	A variable resistor & a method of making the same.

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International News

trends in US patenting by women in the 1977 to 1996 period. It focuses exclusively on patents of US origin (i.e. patents for which the first named inventors resided in the United States at the time of grant) and attempts to identify which of those US origin patents include a woman inventor. Some of the highlights of the Report follow as under:

1. The woman-inventor patent share of annually granted US origin patents rose from 2.6 percent in 1977 to 9.2 percent in 1996.

2. Of the 985,319 US origin patents granted during the 1977 to 1996 period, 5.7 percent included a woman inventor, i.e. were woman inventor patents.

3. During the 1977 to 1996 period, most of the U.S. origin patent grants to women (82.6 percent) were for utility patents i.e. inventions, as compared to 16.4 percent which were for aesthetic design patents and 0.5 percent which were for plant patents.

4. For the 1977 to 1996 period, the largest share of the U.S origin woman-inventor utility patent grants, 49.5 percent, pertained to chemical technologies, while 36.2 percent pertained to mechanical technologies and only 14.3 percent pertained to electrical technologies.

5. About 35 percent of the US origin woman-inventor patents granted during the 1977 to 1996

Contd on...11

182965. Filterwerk Mann +Hummel Gmbh, Germany (372/Bom/95)

182966. Normstahl Werk Doring Ag, Switzerland (380/Bom/95)

182967. Searle (India) Ltd, India (449/Bom/96)

182968. Lupin Laboratories Ltd, India (482/Bom/96)

182969. Lupin Laboratories Ltd, India (30/Bom/97)

182970. Shyam Khanna, Mumbai, India (109/Bom/97)

182971. Maschinenfabrik Rieter Ag, Switzerland (469/Mas/93)

182972. Ciba Speciality Chemicals Holding Inc, Switzerland (604/Mas/93)

182973. Caterpillar Inc, USA (635/Mas/93)

182974. Anthony Errol Harris & Dan Hung, British Nationals (710/Mas/93)

182975. Zanussi Electrodomestici S P A, Italy (732/Mas/93)

182976. AT & T Corp, USA (747/Mas/93)

182977. Thavitupayalam Venkatraman Jagadessan, India (758/Mas/93)

182978. Kudakkachira Thomas, India (774/Mas/93)

182979. Zanussi Eletirodomestici S P A, Italy (840/Mas/93)

182980. Dr Kota Harinarayana & others, India (857/Mas/93)

182981. Darmag Ag, Germany (859/Mas/93)

182982. Wes Technology Inc, USA (923/Mas/93)

182983. Sedepro, France (927/Mas/93)

182984. Sedepro, France (928/Mas/93)

182985. Dana Corp, USA (933/Mas/93)

182986. Norton Chemical Process Procducts Corp, USA (936/Mas/93)

Fluid filter.

Finger protection means for a sectional door.

A process for the preparation of novel pestitcidal composition.

A process for the manufacture of 2-[(2-pyridyl) methylthio] benzimidazone derivatives.

A method for manufacture of cephalosporin antibiotics such as cefazolin.

A process for preparing anti-wrinkle & muscle tonning herbal synergestic composition.

Top comb unit for a combing machine.

Process for the preparation of aryl substituted propionic acid esters.

A control system for automatically regulating the speed of an engine.

Ground environment mats for vestal aircraft operations.

Process for fabricating a perforated drum for clothes washing machine & drum obtained thereby.

A wireless switching system.

LPG cooking gas cylinder gauge.

Electro magnetic tuning alternating system for carburettors.

A plastic tub for washing machines.

Interactive triple display training simulator.

Yarn traversing apparatus.

Isolators.

A pump for viscous material.

Dosaging device.

A multiple sealing system for a cylinder head gasket.

Packing element.

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International News

period originated from California, New York, or New Jersey.

(www.uspto.gov)

An increase of 10 percent in the number of patent applications filed in New Zealand during 1998-99 as compared to 1997-98 has been reported. This increase in the number of patent applications is being attributed to the release of the New Zealand Inland Revenue Department's (IRD) draft interpretation statement covering income tax issues as they relate to patents. According to this draft the costs of prosecuting or defending a patent infringement action, or in prosecuting a patent revocation or opposition action, would generally be dedutible. The defence of a patent revocation or opposition would need to be capitalised and depreciated. Similarly the draft has put the patent renewal fees in the deductible category and has again suggested capitalizing the costs incurred on grant of a patent.

(Patent World, Issue 115, Sept 99)

Under the USPTO's Electronic Filing System (EFS), the PTO has recently launched a new service called EFS BIO for filing of certain biotechnology patents on the Internet. The USPTO has successfully done the Internet filing of a gene sequence listing for a pending biotechnology application on September 29, 1999. EFS BIO eliminates the cost and delay of physically handling, processing and delivering gene sequence listings and also provides real time

Contd on...12

182987. Rieter Ingolstadt Spinnereimas Chinenbau Ag, Germany (005/Mas/94)	Device for detecting breakage in textile slivers upstream of a draw frame.
182988. Rieter Ingolstadt Spinnereimas Chinenbau Ag, Germany (006/Mas/94)	A pressure bar for location in the main drafting zone of a textile drafting device.
182989. Barmag Ag, Germany (96/Mas/94)	A spinning machine for thermoplastic yarns.
182990. Palitexproject Co Gmbh, Germany (101/Mas/94)	Spindle for producing a yarn or twist.
B. 21 August, 1999	
182990. Siemens Aktienge-sellschaft, Germany (997/Cal/94)	Disconnecting contact block with bridgelike contact pieces which are arranged such that they can move with respect to each other.
182991. Hitachi Ltd, Japan (144/Cal/94)	Process adaptive control system.
182992. Siemens Aktienge-sellschaft, Germany (909/Cal/94)	Gas valve for a combination comprising a gas turbine a compressor for combustion air and a combustion chamber having a compressor outlet and a turbine inlet.
182994. Novoflex Cable Industries, India (21/Cal/95)	A bush to relieve strain to a power cable or to a cord.
182995. Custom Packaging Systems Inc, USA (53/Cal/95)	A bulk bag with sidewall restrainer and a method for making the bag.
182996. Goldstar Co Ltd, Korea (181/Cal/95)	Apparatus for controlling kimchi storage temperature in refrigerator.
182997. Saint-Gobain Vitrage, France (102/Cal/95)	A contact tempering device.
182998. Critikon Inc, USA (275/Cal/95)	A catheter device.
182999. Emitec Gesellschaft Fur Emissions Technologie Mbh, Germany (479/Cal/95)	A method for producing soldered metal structure.
183000. Midrex International B V, Switzerland (512/Cal/95)	Method for direct reduction of iron oxide fines into metallized iron fines.
183001. Maschinenfabrik Rieter Ag, Switzerland (423/Mas/92)	Full bobbin and tube transport in spinning machines.
183002. Scheron SA, Switzerland (523/Mas/92)	Pressure medium drive for closing and opening the contacts of a circuit-breaker.
183003. Akzo N V, Netherlands (613/Mas/92)	Suspension and agglomeration of amidoperoxyacids.
183004. Courtaulds Coatings (Holding) Ltd, UK (788/Mas/93)	Powder coating compositions.
183005. China Petro-Chemical Corp & Jingling Petrochemical Co, China (818/Mas/93)	A process for preparing long life supported catalyst for dehydrogenation of saturated hydrocarbons.

Contd from... 11

International News

acknowledgement of submission. Care has been taken to maintain the confidentiality of the applications filed. Further information on EFS BIO can be accessed from http://pto-ebc.uspto.gov

(www.uspto.gov)

A new patent law has been passed by the Croatian Parliament. It came into force on July 31, 1999. The new law harmonises Croatian patent law with latest European trends and brings it in line with GATT standards. The highlights of the law are as below:-

a) Excluded from patent protection are (1) plant or animal species or essentially biological processes for the production of plants or animals, except for microbiological processes or products thereof, and (2) inventions whose publication or exploitation would be contrary to public order or morals. Diagnostic and surgical methods or treatment methods applied directly on a human or animal body, except for products, especially substances and compositions for use in any of these products, are considered as not being appropriate for industrial application and therefore not patentable.

b) Registration of a short-term (10 years term) patent which is not examined.

c) The new patent law will apply to all registered patents and pending patent applications. Infringement actions that are still pending on January 1, 2000 will be subject to the old law.

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183006. Elf Atochem S A, France (904/Mas/93)	A process for the manufacture of a polymer composition.
183007. Mobil Oil Corp, USA (332/Mas/94)	A process for producing a synthetic layered material.
183008. The South India Textile Research Association, India (520/Mas/94)	An improved spindle and sleeve assembly for spinning yarn.
183009. Vittal Mallya Scientific Research Foundation, India (1411/Mas/95)	A process of preparing human insulin.
183010. Chemferm, Netherlands (483/Mas/96)	A process for the recovery of ampicillin from a mixture containing ampicillin and 6-aminopenicillanic acid.
183011. Mr Stephen V Allison, Canada (115/Mas/94)	A self cleaning filter device for solar powered drip irrigation systems.
183012. Nuova Roj Electroex S R L, Italy (117/Mas/94)	Yarn feeding device.
183013. Zellweger Uster Ag, Switzerland (144/Mas/94)	Apparatus for determining the structure of yarns in the region of their surface.
183014. Foseco International Ltd, UK (177/Mas/94)	A bonded refractory heat-insulating composition.
183015. UHDE Gmbh, Germany (181/Mas/94)	Process and apparatus for the production of granulated ammonium nitrate of a predetermined grain size.
183016. Eniricerche SPA , Italy (189/Mas/94)	Process for preparing water soluble sulfonated dispersants.
183017. Maschinenfabrik Rieter Ag, Switzerland (182/Mas/94)	An apparatus for attaching working elements.
183018. Pardies Acetiques, France (246/Mas/94)	Process for the preparation of carboxylic acids or the corresponding esters in the presence of a catalyst based on iridium.
183019. Pardies Acetiques, France (257/Mas/94)	Process for the preparation of carboxylic acids or the corresponding esters in the presence of a catalyst based on rhodium and iridium.
183020. John O Butler Co, USA (278/Mas/94)	An interdental toothbrush.
183021. University of Essex, UK (114/Mas/92)	A method of manufacturing a protected substrate.
183022. Urea Casale S A, Switzerland (115/Mas/92)	A method of producing urea.
183023. Puthparampil Varughese Devasia, India (140/Mas/92)	A device for supporting a latex collection receptacle on a latex yielding tree.
183024. Foseco International Ltd,	A filter for filtration of molten light

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International News

(Patent World, Issue 116, Oct 99)

Protein Design Labs Inc (PDL) has been granted a second patent by European Patent Office on methods for choosing human frameworks and producing humanised antibodies from them. The first patent awarded to PDL on humanized antibodies in 1996 is being opposed.

(Genetic Technology News, Vol 19, No 36, Sept 8, 1999)

Los Alamos National Laboratory (LANL) has obtained a US patent (Pat No 5,944,329) for a new mounting technology which shall enable machining with much greater accuracy. LANL researchers have developed a kinematic magnetic mount on a tooling machine, such as a lathe, polisher or jig bore, which has a positioning error of less than 0.25 mm and can hold millimeter-sized geometrically shaped parts. This technology is not just limited to MEMS (micro-electromechanical systems), it can also be used to machine large parts.

(High-Tech Materials Alert, Vol 16 No10, Oct 99)

Domestic News

Wockhardt Ltd has filed four US patent applications for novel drug delivery systems (NDDS). Three of these are cardiovascular products and one is an antiulcerant. The company is also planning to file abbreviated new drug applications (ANDAS) for

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UK (149/Mas/92)	metals.
183025. Societe Des Produits Nestle S A, Switzerland (176/Mas/92)	A process for producing a soluble coffee powder with enhanced coffee flavour.
183026. Institute Francais Du Petrole, France (205/Mas/92)	A method of preparing microporous crystallized gallium phosphate and its substituted derivatives.
183027. Institute Francais Du Petrole, France (221/Mas/92)	A process of preparing esters of carboxylic acid.
183028. Sajja Perumal Subramanian, India (309/Mas/92)	A jacquard card.
183029. Kemira Oy, Finland (396/Mas/92)	A fertilizer composition.
183030. Hoechst Aktienge-sellschaft, Germany (407/Mas/92)	A process for the preparation of an ethylene polymer having a uniform course particle shape and high bulk density.
C. 28 August, 1999	
183031. Hindustan Lever Ltd, India (353/Bom/94)	A process for the preparation of cosmetic composition effective against pimples and redness.
183032. Kurkute Brothers Private Ltd, India (470/Bom/94)	A diaphragm type compressor.
183033. Ashok Patil, India (158/Bom/97)	A process of preparing reuterin antibiotic.
183034. Ashok Patil, India (159/ Bom/97)	A process of preparing the therapeutic preparations for reduction of acute diarrhoea symptoms or for stopping dehydration of mammals and in particular young patients.
183035. Ashok Patil, India (211/Bom/97)	A process of manufacturing cryptosporidium infection reducing therapeutic concentration.
183036. Cheil Jedang Corp, Korea (281/Bom/97)	A process of highly pure crystalline form of cefuroxime axetil.
183037. Dr Joshi Yeshwant Kashinath, India (441/Bom/97)	A process for making synergistic composition for the treatment of rheumatoid arthritis.
183038. Hindustan Lever Ltd, India (485/Bom/97)	A process for producing a shaped wafer.
183039. Biorex Kutato Es Fejlesto Rt Vespremszabadsaguprszta, Hungary (200/Bom/98)	Process for preparing o-(3-amino-2hydroxypropyl) hydroxymic acid halides.
183040. Sonic Biochem Extractions Pvt Ltd, India (533/Bom/98)	The process of extraction soy protein concentrate from defatted soybean flakes.
183041. Hindustan Lever Ltd, India (489/Bom/94)	A package comprising a chamber adapted to contain a flowable or fusible material.
183042. Madhav Narhar Damle, India (509/Bom/94)	High resolution remotely resettable time clock.

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Domestic News

their products with the US drug authorities.

(Economic Times, 18 Oct, 99)

A US patent has been granted to Council of Scientific and Industrial Research (CSIR) for a new hybrid variety of mint or 'mentha arvensis' called Himalaya. It has been developed by the scientists at the Central Institute of Medicinal and Aromatic Plants (CIMAP), Lucknow. The new plant variety gives higher yield of the oil rich in menthol and is resistant to common diseases.

(Business Line, 1 Oct 99)

Patent infringement suits against Hyderabad based Dr. Reddy's Research Laboratories have been filed separately by Glaxo Wellcome Plc and Pfizer for two products ondansetron and amlodipine respectively in the Russian market. Probably the initial court rulings have gone against DRL. But DRL is planning to appeal against the verdict.

(Financial Express, 23 Oct 99)

The Geohess UK Ltd has received a European patent (Pat No 728048) for the use of hessian cloth on landfill sites to cover rubbish. It is now claiming that anyone covering rubbish with hessian cloth would have to pay it a royalty of 65 per cent of the cost of the hessian in the UK. One UK based company which was billed by Geohess has questioned the validity of the patent in the UK court. The company's attorney has also contacted Indian company

Contd on...15

183043. Hindustan Lever Ltd, India (511/Bom/94)	A method of preparing a dentifrice.
183044. Shantanu Anil Netke & Vishwas Govind Panngarkar, India (571/Bom/94)	A liquid -liquid extraction of a solute from the solution.
183045. Hindustan Lever Ltd, India (652/Bom/94)	A detergent composition.
183046. Consafe Science (India) Pvt Ltd, India (47/Bom/95)	A process for treatment of spent wash in distilleries or the like to accomplish zero effluent discharge resulting in a combustible product to be used as a fuel and a plant therefor.
183047. Bhavnagar University, India (65/Bom/95)	Non-contact type centrifugal switch using magnetic fluid.
183048. Prakash Krishna, India (75/Bom/95)	A plastic injection moulding machine.
183049. Herdillia Chemicals Ltd, India (237/Bom/95)	An improved process for the preparation of dimethyl benzyl carbinol i e 2-methyl-1-phenyl-2-propanol from isobutyl benzene.
183050. Dr M S Sagare Principal Bharti Vidyapeeth's Arts Science & Commerce College Sangli, Maharashtra (256/Bom/95)	Process of preparation a new Li-Cd ferrite composition which exhibits electrical switching at room temperature.
183051. The Procter & Gamble Co, USA (926/Del/91)	An improved process for manufacturing a linear glucamide surfactant.
183052. Camas International Inc, USA (984/Del/91)	An apparatus for providing a fluidizied bed of uniform density medium.
183053. CSIR, India (265/Del/92)	An improved process for the production of thin semiconductor devices.
183054. CSIR, India (1090/Del/92)	A process for the preparation of novel 1 4-dihydro-4 (substituted aryl) 3 5-di-n alkyl/dialkyl carbamoyl pyridines.
183055. Dexter Chemicals (I) Pvt Ltd, India (220/Del/93)	A method for the preparation of ethereally substituted monosaccharides.
183056. Rohm & Haas Co, USA (758/Del/93)	A process for the preparation of storage stable neem seed extract.
183057. CSIR, India (1239/Del/93)	An improved process for the preparation of adipic acid by the oxidation of cyclohixane using a cobalt catalyst with simultaneous recovery of the catalyst.
183058. Rohm & Haas Co, USA (22/Del/95)	Preparation of crosslinked anion exchange particles.
183059. Sbl Ltd, India (60/Del/95)	A process for preparing a synergistic homeopathic composition for the treatment of trauma.
183060. Sbl Ltd, India (608/Del/95)	A process for preparing a synergistic homepathic composition for the treatment of jaundice fatigue tiredness malaise an orexia nausea.

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Domestic News

Hastings Jute Mill who have further brought this matter to the notice of Indian Jute Mills' Association (IJMA), Jute and Mineral development Corporation (JMDC) and Indian Jute Mill Research association (IJRA) as this patent can have negative impact on Indian jute exporters. If some strong action is not taken at this point of time tomorrow one can patent the use of potato sacking bags, wheat bags and any other thing where jute is being used. Jute industry being 100 years old in India and the low cost of the jute fibres have led to a wide use of this fibre over the period of time. If one has to pay 10 to 15 per cent extra for the same thing as royalty, the consumers may not pay that high price and this may lead to declime in the use of jute.

(Financial Express, 13 Oct 99)

Cadila Pharma Ltd (CPL) has won the copyright infringement suit against Cadila Healthcare Ltd (CHL) over CPL's cardiovascular drug 'Envas". CPL alleged that CHL was using the identical design in the strip and box for its drug to encash on the popularity of Envas. The court has now directed CHL to withdraw its product from the market, give an account of production and selling of the product and to bear the costs incurred by CPL in fighting the case.

(Financial Express, 8 Oct 99)

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Case Study

tetrachloro-ethylene (PCE) and trichloroethylene (TCE) will produce ethylene 63.

First liquid effluent 53 of first reactor 52 is transferred to second reactor 54. In a second methanogenic step, dechlorination and methane 56 production occur. Reductive PCE dechlorination by methanogens to produce ethylene 63 during metabolism of a primary substrate 60, such as acetate or methanol, has been documented. Therefore, one such substrate 60 is added to the reactor if one not present in first liquid effluent 53 from the sulfate-reduction step. The specific microorganisms that would be enriched in reactors operated as indicated above would depend on the salinity and temperature of the reactor content. If second reactor 54 is operated at a relatively high pH (above pH 8), over 95 percent of the hydrogen sulfide gas is ionized. At pH 7, about two thirds is ionized. Ionized (soluble) sulfides 61 concentrations over 200 milligrams per liter (as sulfur) are toxic to methanogens.

If residual organic concentrations are excessive, a final aerobic treatment step can be incorporated into the process by transferring second liquid effluent 55 to third reactor 57. Activated sludge and trickling filter unit processes are examples of appropriate aerobic process steps for producing third liquid effluent 58.

Claims:

The patent has 34 claims, covering various hazard removal processes, like denitrification, sulfate reduction, methanogenesis and aerobic respiration, under different conditions such as presence of electron donors, anaerobic, anoxic and aerobic environment and at different temperature ranges. Various possible steps of such processes are claimed individually and in different combinations thereof.

PFC on the move...

TIFAC Awarded Its First Patent

1. PFC has facilitated filing of 70 patent applications, which includes 20 applications filed in other countries and one PCT application. A patent has been recently granted by Sri Lanka to TIFAC and Ahmedabad Textiles and Industrial Research Association (ATIRA) on the invention related to synthetic thickener for textile printing. The invention deals with an alternative to the use of kerosene in textile printing.

2. A patent awareness workshop was organised at REC, Kurukshetra on October 9, 1999. About 110 scientists and technologists belonging to various educational and research institutions in the region participated in the proceedings of the workshop.

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

NEXT ISSUE

- **Case Law**
- **Case Study**
- **Patents for Opposition**

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