Indian Leather Technologists' Association

[A Member Society of International Union of Leather Technologists' and Chemists Societies (IULTCS)]

'SANJOY BHAVAN', 3rd Floor, 44, Shanti Pally, Kasba, Kolkata – 700 107
Telephone : (033) 2441-3459/7320 • TeleFax : (033) 2441-3429
E-mail : admin@iltaonleather.org / mailtoilta@rediffmail.com
Website: www.iltaonleather.org

Mission & Vision

- An Association with over 600 members from India and abroad working since last 64 years for the growth and development of Leather and its allied industries.
- Organize seminars, symposiums, workshops in order to share information, knowledge & latest development and interactions for the benefit of all concerned.
- Organize Human Resource Development programmes on regular basis.
- Publish for over 60 years, a technical monthly journal namely "Journal of Indian Leather Technologists' Association" (JILTA), widely circulated through out the World.
- Publish books for the benefit of the students at various levels of study, for the Research Scholar and the Industry.
- Work as interface between Industry and the Government.
- Assist Planning Commission, various Government Institutions, Ministry and autonomous bodies to formulate appropriate policies for the growth of the Industry.
- Assist small and tiny leather goods manufacturers in marketing their products by organizing LEXPOs in Kolkata and different parts of India.

Now available

Sl. No.	Title of the Book	Author	Price per Copy*	
			Inland (INR)	Foreign (USD)
01.	Treatise on Fatliquors and Fatliquoring of Leather	Dr. Samir Dasgupta	` 1500.00	$ 60.00
02.	Comprehensive Footwear Technology	Mr. Shomenath Ganguly	` 500.00	$ 50.00
03.	An Introduction to the Principles of Leather Manufacture (New Edition)	Prof. S. S. Dutta	` 800.00	$ 50.00
04.	Analytical Chemistry of Leather Manufacture	Mr. P. K. Sarkar	` 300.00	$ 10.00
05.	Synthetic Tanning Agents	Dr. Samir Dasgupta	` 900.00	$ 30.00
06.	Hand - Book of Tanning	Prof. B. M. Das	` 750.00	$ 25.00
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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION [JILTA]

Indian Leather Technologists' Association is a premier organisation of its kind in India was established in 1950 by Late Prof. B.M.Das. It is a Member Society of International Union of Leather Technologists & Chemists Societies (IULTCS).

The Journal of Indian Leather Technologists' Association (JILTA) is a monthly publication which encapsulates latest state of the art in processing technology of leather and its products, commerce and economics, research & development, news & views of the industry etc. It reaches to the Leather / Footwear Technologists and the decision makers all over the country and overseas.

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INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION

(Member Society of International Union of Leather Technologists and Chemists Societies)

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION [JILTA]

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LEATHER SCIENCE ABSTRACT [LESA]

: EDITORIAL BOARD :

Environmental Sustainability and Green Supply Chain Management

The economic growth increases the level of energy and material consumption, which contribute to the environmental issues and resource depletion problems. It has become increasingly significant for organizations facing competitive, regulatory, and community pressures to balance economic and environmental performance. Nowadays, most organizations are starting to go green in their business as concern to environmental sustainability. They have realized the greater benefit of the green technology adoption in business operation, which also affected suppliers and customers. Environmental issues under legislation and directives from customer especially in the US, the European Union (EU), and Japan become an important concern for manufacturers. As a result, Green Supply Chain Management (GSCM) emerges as a new systematic environmental approach in supply chain management and has been increasingly accepted and practices by forward-thinking organization. The current changing in environmental requirements that influenced manufacturing activities had increased attention in developing environmental management (EM) strategies for the supply chain. Thus, the concept of GSCM arises as a new systematic approach and becoming an important factor for business activities today. By integrating the 'green concept to the supply chain' concept, it has created a new research agenda where the supply chain will have a direct relation to the greener sustainability.

Amid rising awareness of the impact businesses can have on the environment, companies of every size and type have begun implementing environmental sustainability initiatives. Many organizations have introduced recycling programs and made efforts to reduce their carbon emissions as a way to mitigate the adverse effects of their business processes. However, these aren't the only ways corporations can make a difference. Some companies are taking a big-picture approach by examining every step of their product lifecycle and applying green supply chain management practices across the board. In fact, there are many creative – and surprisingly easy – ways organizations can embrace environmental sustainability and use it to their advantage.

Environmental Sustainability:

Sustainable business initiatives can relate to social, corporate and/or environmental sustainability. Collectively, they involve examining business processes and practices in terms of people, planet and profit, and seeking out ways to create a positive impact in each of these areas. While improving working conditions and protecting the environment are certainly admirable goals, they have also proven to be good business strategies. For example, implementing environmentally sustainable practices and green supply chain management has the potential to eliminate waste and generate cost savings, leading to a stronger bottom line. In addition, with many consumers committed to "going green," eco-friendly businesses often benefit from favorable public opinion and greater customer loyalty. Several well-known and highly successful companies are proving to be leaders in the fields of environmental sustainability and green supply chain management. Following are just a few of the ways these organizations are supporting the environment – and reaping the rewards.

Green Supply Chain Management:

Green supply chain management can be defined as integrating environmental thinking into supply-chain management, including product design, material sourcing and selection, manufacturing processes, delivery of the final product as well as end-of-life management of the product after its useful life.

Sustainability can be maximized throughout the supply chain, beginning with concept and development then continuing through all phases of production and final customer distribution. Articles here focus on efforts by materials suppliers, product manufacturers and retailers to increase sustainability. These increased sustainability efforts are made to decrease the impact of the supply chain on future generations.

One can view both these concepts are mutually reinforcing each other. It is a matter of details where green end and where sustainability begins. It would be better to take each of them as necessary for understanding of a holistic concept of supply chain wherein there is a minimum damage to the mother earth and yet we are able to conduct business. We should also understand that sustainability does not mean that we stop doing business but we also consider the supply chain for sustainable growth!. The growth dimension adds aspirations and expectations of various stakeholders of the chain.

First of all, there is ambiguity between those two terms i.e. sustainability and green supply chain. Some researchers use them interchangeably. In general, the sustainable supply chain is built on three dimensions: social, economical, and environmental, while the green supply chain focus on an environmental issue with considering to an economic result. Moreover, the reason behind emerging stream of research of green supply chain is that many works of sustainable growth focus on a profit as a first priority with respect to other two dimensions; social and environmental while the green supply chain research finds that environmental issue is an opportunity to create economic value rather than a respectable constraint through the way of creating economic value. One will agree the terms of overlap. Green Supply Chain Management actually integrates social concerns as well. The emphasis on Green is to indicate that economic systems are contained in social systems which are in turn contained in ecological systems. We will not have business without a planet and inter planetary business has no existence yet! Indeed, green supply chains are linked to Green Growth ideas. Investing in the cause of environment is a positive driver for growth.

It is important to integrate environmental management practices into the whole supply chain management in order to achieve a greener supply chain and maintain competitive advantage and also increase business profit and market share objectives. Various definition of GSCM exist in the literature. Accordingly, Zhu and Sarkis defines GSCM as has ranged from green purchasing to integrated supply chains starting from supplier, to manufacturer, to customer and reverse logistics, which is ''closing the loop''. According to Srivastava, GSCM can be defined as ''integrating environmental thinking into supply chain management, including product design, material sourcing and selection, manufacturing process, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life''. The quality revolution of the 1980s and the supply chain revolution of the 1990s extend the green supply chain literature with the beginning of corporate environmental management, environmentally conscious manufacturing strategy, and supply chain management literature. It has become clear that the best practices call for integration of environmental management with ongoing operations. Green supply-chain management (GSCM) is gaining increasing interest among researchers and practitioners of operations and supply chain management. The past literature also shows that most researchers have studied the GSCM adoption and implementation on developed countries such as Japan, Germany, Portuguese, UK and Taiwan and so on. Still limited studies have examined the GSCM practices in developing countries.

Following the green or ecological pressures from customers, stakeholders, and governments, a number of operational guidelines, standards and legislative frameworks have been put in place to minimize environmental impact. Motivated by the need for companies to move towards ecologically sustainable business practices, the ISO14000 series standard was designed with the following objectives:

- encouraging an internationally common approach to environmental management;
- strengthening companies' abilities to measure and improve environmental performance, through continual system audits, and;
- improving international trade and removing trade barriers.

Similar to ISO14000 standards, is the Occupation Health and Safety Assessment Series standards (OHSAS18000) whose focus is on international occupational health and safety management. Other global initiatives in the context of greening the environment include the Restriction of Hazardous Substance (RoHS) and the Waste Electrical and Electronic Equipment (WEEE) which enforce compliance with the relevant laws relating to product recycling and prohibit the use of hazardous substances in products for sale in the market. Other minor regulatory bodies exist in the literature.

In light of the above issues, it can be seen that GSCM is driven by the increased environmental deterioration such as depletion of raw materials, overflowing waste landfills, and pollution in general. Thus, GSCM primarily seeks to minimise the wastes within the industrial system, to prevent the dissipation of harmful materials into the environment, and to conserve energy resources. The objective, however, is not only about environmental friendliness, but also a good sense of business and higher profits. Business organisations have realised the need to upgrade their supply chain management from a purely functional role to a strategic role to comply with current environmental legislations and maintain an enduring competitive advantage, through technological innovation and improved eco-efficiency. Operations managers in earlier environmental management systems were involved only at arm's length where individual organizational units managed environmental performance in product and process design, logistics, marketing, compliance regulations, and waste management. Though it has long been realised that green strategies should meet the required order winning criteria in the market place, the idea needs to be extended to the entire supply chain. Best practices call for collaborative integration of environmental and operational performance. There is a growing need for integrating environmentally sound choices into supply chain management practice and research.

This discussion calls for a look from leather industry to have a rethink and relook into this aspect to have a highly honoured sustainable footstep in society with upcoming generations.

Goutam Mukherjee

Goutam Mukherjee

66th Foundation Day Celebration

Up to now, Foundation Day Celebration Sub-Committee have met five times and have decided as follows with E.C.'s concurrence:

The Foundation Day Celebration main programme has been arranged on Friday, the 19th August, 2016 Friday at the Mini Auditorium of the Science City, Kolkata.

The programme is scheduled as follows :-

01.00 PM : Registration

02.00 PM to 05.00 PM :

(1) Welcome Address by Mr. Arnab Jha, President, ILTA

(2) Speech by Dr. Ashish Banerjee, Chief Guest, Hon'ble Minister – in – Charge Dept. of Science & Technology, Development & Training and Statistics & Programme implementation Govt. of West Bengal

(3) Speech by the Guests of Honour :

- Mr. Ramesh Juneja, Regional Chairman(East), Council for Leather Exports (CLE)
- Mr. Imran Javed Khan, General Secretary, Calcutta Leather Complex Tanners Association (CLCTA)
- Mr. Satyabrata Mukherjee, Chairman, Indian Leather Products Association (ILPA)

(4) Award Giving Ceremony :

- B. M. Das Memorial Award
- J. M. Dey Memorial Award
- J. Sinha Roy Memorial Award

(5) B. M. Das Memorial Lecture by Dr. B. Chandrasekaran, Director. CSIR – CLRI, Chennai titled as: **'Innovation, Translation & Transformation for Sustainability'**

(6) Lecture by Mr. Nari Kalwani, Chairman & Managing Director, Asian Leather Ltd., Kolkata titled as: **'Good Management Practices in Leather Goods Industry'**

(7) Vote of Thanks by Mr. Susanta Mallick, General Secretary, ILTA

05.00 PM to 05.30 PM	:	High Tea
05.30 PM to 06.00 PM	:	Family Quiz Contest
06.00 PM	:	Theater titled 'MANUSH BHOOT' by the **Mangolik** group
08.30 PM	:	Dinner

In addition to above the 66th Foundation Day Celebration on a small scale will be organized formally on the actual Foundation Day of ILTA i.e. Sunday, the 14th August, 2016 at ILTA Registered Office, at 11.30 AM.

Individual Invitation Cards have already been posted to Members on Monday, 25th July, 2016.

All Members are requested to kindly inform ILTA Office latest by Friday 12th August, 2016 between 02.00 PM to 08.00 PM over telephone no. (033) 2441 3429 / 3459 & mobile no. 9432553949, email id : admin@iltaonleather.org / mailtoilta@rediffmail.com, the number of your family members including yourselves who are sure to participate in the family get together on Friday the 19th August, 2016.

LEXPOs

LEXPO Sub-Committee have met thrice since its formation and subject to availability of the venue, have drawn up a tentative plan of holding LEXPOs during F.Y. 2016-17 as follows :-

Durgapur IV	:	Fair Period – 31.12.2016 to 15.01.2017
Kolkata XXXX	:	Fair Period – 04.02.2017 to 19.02.2017
Siliguri XXIII	:	Fair Period – 11.03.2017 to 26.03.2017

Letters have already been sent to the competent authorities requesting for allocation of ground accordingly. Replies are awaited. Follow-up is being maintained.

You are requested to :-

a) Kindly inform us your '**E-Mail ID**', '**Mobile No**', '**Phone No**', through E-Mail ID: admin@iltaonleather.org or over Telephone Nos. : 24413459 / 3429 / 7320. This will help us to communicate you directly without help of any outsiders like Postal Department / Courier etc.

b) Kindly mention your **Membership No. (If any)** against your each and every communication, so that we can locate you easily in our record.

c) **Kindly obtain an Acknowledgement Slip (available at ILTA Office) for any document handed over to ILTA Office.**

Susanta Mallick
General Secretary

Executive Committee Members meet every Thursday at 18-30 hrs. at ILTA Office.
Members willing to participate are most welcome.

XXXIV IULTCS CONGRESS

(International Union of Leather Technologists and Chemists Societies)

"Science and Technology for Sustainability of Leather"

R&D focus of research institutes, chemical companies and organizations around the world has been the sustainable development of the leather sector. In this scenario, the congress aims to address the following technological challenges:

- Fundamentals in leather science
- Strategies for sustainability
- Innovation and value addition for leather
- Advances in chemicals for smart and intelligent leathers
- Design innovation for lifestyle leather products
- Emission control strategies
- Enriching human capacity
- Global research alliances and partnerships

Important Dates:

- Congress Dates: 5 – 8 February 2017, preceded by India International Leather Fair, Chennai (1–3 February 2017)
- Congress Localization: Chennai
- Abstract submission due: 31 October 2016
- Selection of papers: 15 November 2016
- Early bird registration till: November 2016
- Expected Number of Participants: 200 International, 300 Indian

Organizers:

- Indian Leather Technologists Association (ILTA)
- CSIR-Central Leather Research Institute (CSIR-CLRI)

Congress Partners:

- Council for Leather Exports, India (CLE)
- Indian Finished Leather Manufacturers & Exporters Association (IFLMEA)

Organization committee:

- Congress President: Dr T Ramasami, Former Secretary, S&T, Govt. of India
- Patrons:
  - Mr M Rafeeque Ahmed, Chairman, Council for Leather Exports
  - Mr N Shafeeq Ahmed, President IFLMEA

- Institutional representatives:
  - Dr B Chandrasekaran, Director CSIR-CLRI,
  - Mr Arnab Jha, President ILTA,
- Congress Convener: Dr N K Chandrababu, Chief Scientist, CSIR-CLRI;
- Working President: Dr S Rajamani, ILTA

Indian Leather Industry, through CSIR-CLRI & ILTA and through the Council for Leather Exports and IFLMEA welcome all the visitors, industrialists, academicians and researchers interested in leather to participate at the XXXIV IULTCS Congress. With India International Leather Fair, just before the congress and good climate to visit Chennai, the participants to the congress would be taken through a rich experience of S&T innovations in leather and the cultural diversity of India.

Please visit our website www.iultcs2017.org for further details.

UPDATE on The IULTCS Merit Award - 2017

The 2017 IULTCS Merit Award for Excellence in the Leather Industry has been awarded to:

Professor Dr Mariliz Gutterres, Laboratory for Leather and Environmental Studies (LACOURO), Federal University of Rio Grande do Sul (UFRGS), Porto Alegre, RS - Brazil.

The 2017 IULTCS Merit Award will be presented at the IULTCS Congress in Chennai, 5th – 8th February 2017.

(Source: Email from Campbell Page, IULTCS Secretary – 6th July' 2016)


IULTCS 2017
INDIA
XXXIV IULTCS CONGRESS
5-8 February 2017, CSIR-CLRI, Chennai, India
www.iultcs2017.org
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IFLMEA
Indian Finished Leather Manufacturers & Exporters Association (IFLMEA)
For further details please contact: Congress Secretariat, CSIR-CLRI, Chennai, India, Email: iultcs2017@clri.res.in

TESTING

Dinker Bajpai*

Leather Technologist, Bureau Veritas Consumer Products Services India Pvt. Ltd.

Introduction

There are quantities of test methods systematically used for colour fastness and for dyes. The more appropriate are:

✓ Grey Scale for Assessing Change in Colour: This Grey Scale is for assessing changes in colour of leather in colour fastness tests, for example, wash fastness, perspiration fastness, etc. The scale consists of nine pairs of grey colour chips all representing a visual difference and contract.

✓ Grey Scale for Assessing Staining: This Grey Scale is for assessing the degree of staining caused by dyed leather in colour fastness tests. For example, the staining of wool and cotton fabrics in the wash fastness, perspiration fastness, etc. The scale consists of nine pairs of grey colour chips each representing a visual difference and contrast.

✓ Colour Fastness of Leather to Light: This method is intended for determining the resistance of the colour of leather to the action of a standard artificial light source. The Xenon lamp has an emission wavelength profile close to daylight. The side to be tested of the leather sample is exposed to light from a Xenon Lamp, under controlled conditions, along with eight blue dyed wool standards (blue scale). The light fastness is assessed by comparing the fading of the leather with the fading of the blue standards. The fading is typically made in 2 exposure times to better assist the evaluation.

✓ Colour Fastness of Leather to Mild Washing: Fastness of the colour of leather to hand washing is the resistance to washing under mild domestic laundering in water. In washing leather, not only changes in colour can occur in the leather, but coloured substances may bleed from it and may stain adjacent textile materials.

✓ Colour Fastness of Leather to Machine Washing: Fastness of the colour of leather to machine washing is the resistance to washing under domestic machine laundering in water. In washing leather, not only changes in colour can occur in the leather, but coloured substances may bleed from it and may stain adjacent textile materials.

✓ Colour Fastness of Small Samples to Dry Cleaning Solutions: This method is intended only for determining the resistance of the colour and the finish of leather to dry cleaning solutions. It does not cover the suitability of composites or complete leather garments to dry cleaning processes.

✓ Colour Fastness of Leather to Migration into Plasticized PVC: The colour fastness in espect of migration into plasticized poly (vinyl chloride) - PVC - is the transfer of colour from leather to white plasticized PVC at 50° C. The side of the leather sample to be tested is placed on a white pigmented sheet of Plasticized PVC and the composite specimen is exposed to heat under pressure in an appropriate apparatus for 16 h at 50° C.

* Corresponding Author's e-mail ID: dinker.bajpai@in.bureauveritas.com

✓ Colour Fastness of Leather to Perspiration: By fastness of colour of leather to perspiration is meant its resistance to the prolonged action of an artificial perspiration solution.

✓ Another way of test is Chrome-free leather. This leather has gradually gained commercial importance, particularly for automobile upholstery applications. In many respects, however, chrome-free leather is inferior to chrome-tanned leather. UV and heat are known to be more detrimental to chrome-free leather than to chrome-tanned leather, especially in regard to the colorfastness of dyestuff and mechanical properties. Temperature, UV radiation, and humidity are key environmental factors that affect leather properties. The role of humidity and its interaction with UV radiation and temperature on leather properties, however, are not clear to the leather industry,, and this information is needed for formulation of antioxidants that will protect chrome-free leather from UV and heat damage.

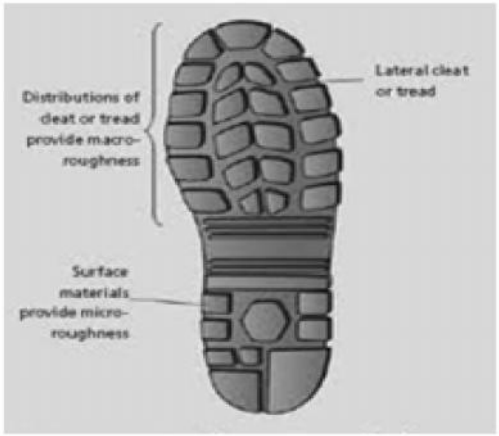
Footwear Testing General shoes

Whole Shoes

- Heel attachment
- Heel fatigue
- Sole adhesion
- Top piece Attachment

Upper Materials

- Colour fastness to circular rubbing
- Colour fastness to water & perspiration
- Water penetration
- Wick test



Soling Materials

- Abrasion
- Belt flex
- Hardness

Chemical

- Azo dye
- Formaldehyde
- Heavy metal
- Hexavalent Chromium Cr (VI)

Accessories

- Attachment strength
- Atmospheric sulphide tarnishing and salt water corrosion
- Shoe lace strength

Safety Shoes

We can conduct tests in compliance with BS Standard BS EN ISO 20344:2004 requirement.

Whole footwear

- Upper and outsole bond strength
- Impact resistance (toe protection)
- Compression resistance (toe protection)
- Corrosion resistance of metal toecaps (toe protection)
- Penetration resistance

Upper Materials

- Thickness
- Height of the upper
- Tear strength
- Tensile properties
- pH value

Upper Materials

- Thickness
- Height of the upper
- Tear strength
- Tensile properties
- pH value

Lining

- Tear strength
- Abrasion resistance
- pH value

Insole

- Thickness

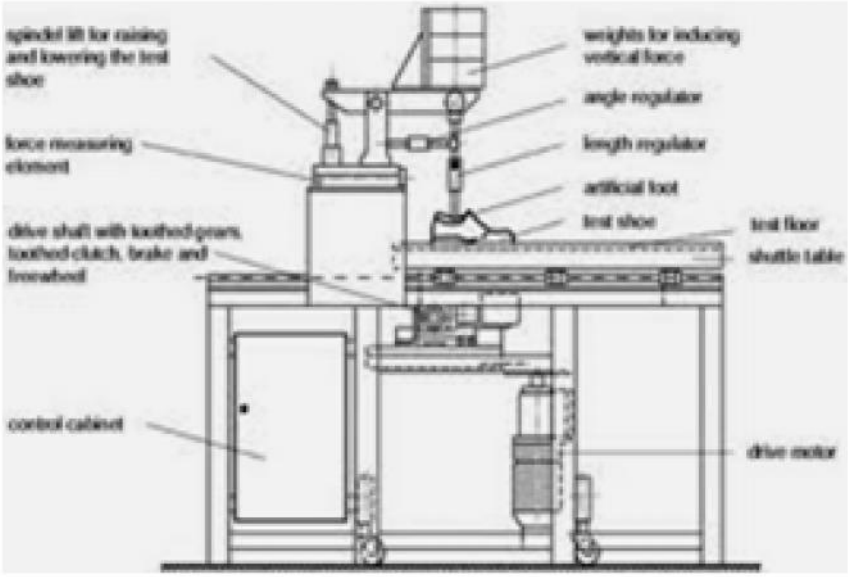
Outsole

- Abrasion resistance
- Cleated area
- Interlayer bond strength
- Resistance to hot contact
- Resistance to fuel oil
- Tear strength (provide 2mm thick flat sheet)
- Thickness of non-cleated outsoles

Leather Testing

Our laboratory also provides a wide range of leather testing as shown below.

- Fat and free fatty acid contest
- Total mass per unit area
- Thickness
- Tearing strength
- Abrasion resistance
- Bursting strength
- Vamp flexing



Methods of analysis for leather, including the equivalent ISO and EN Standards

IULTCS - CHEMICAL TEST METHODS:

IU No. *	Method name	ISO Standard *	EN Standard *
IUC 1 (1965)	General comments	-	-
IUC 2	Sampling location (same as IUP 2)	ISO 2418:2002	EN ISO 2418
IUC 3	Preparation of chemical test samples	ISO 4044:2008	EN ISO 4044
IUC 4	Determination of matter soluble in dichloromethane and free fatty acid content	ISO 4048:2008	EN ISO 4048
IUC 5	Determination of volatile matter.	ISO 4684:2005*	EN ISO 4684
IUC 6	Determination of water soluble matter, water soluble inorganic matter and water soluble organic matter.	ISO 4098:2006	EN ISO 4098
IUC 7	Determination of sulphated total ash and sulphated water insoluble ash	ISO 4047:1977	EN ISO 4047
IUC 8-1	Determination of chromic oxide content Part 1: Quantification by titration	ISO 5398-1:2007	EN ISO 5398-1
IUC 8-2	Determination of chromic oxide content Part 2: Quantification by colorimetric determination	ISO 5398-2:2007	EN ISO 5398-2
IUC 8-3	Determination of chromic oxide content Part 3: Quantification by atomic absorption spectrometry	ISO 5398-3:2007	EN ISO 5398-3
IUC 8-4	Determination of chromic oxide content Part 4: Quantification by inductively coupled plasma (ICP-OES)	ISO 5398-4:2007	EN ISO 5398-4
IUC 9	Determination of water soluble magnesium salts	ISO 5399:1984	EN ISO 5399
IUC 10	Determination of nitrogen and hide substance	ISO 5397:1984	-

IU No. *	Method name	ISO Standard *	EN Standard *
IUC 11	Determination of pH and difference figure	ISO 4045:2008	EN ISO 4045
IUC 13 (1975)	Determination of zirconium	-	-
IUC 15 (1973)	Determination of phosphorus	-	-
IUC 16 (1969)	Determination of aluminium	-	-
IUC 17 (1980)	Determination of hydroxyproline in materials containing collagen	-	-
IUC 18	Determination of hexavalent chromium content	ISO 17075:2007	EN ISO 17075
IUC 19-1	Determination of formaldehyde content in leather Part 1:Quantification by HPLC	ISO 17226-1:2008	EN ISO 17226-1
IUC 19-2	Determination of formaldehyde content in leather Part 1: Quantification by colorimetric analysis	ISO 17226-2:2008	EN ISO 17226-2
IUC 19-3 (final draft)	Determination of formaldehyde content in leather Part 1: Formaldehyde emissions from leather	ISO 17226-3:2008 final formal vote stage	EN ISO 17226-3 final formal vote stage
IUC 20-1	Chemical tests for the determination of certain azo colorants in dyed leathers - Part 1: Determination of certain aromatic amines derived from azo colorants	ISO 17234-1:2010 (replaces ISO/TS 17234:2003)	EN ISO 17234-1 (replaces CEN ISO/TS 17234)
IUC 20-2 (final draft)	Chemical tests for the determination of certain azo colorants in dyed leathers - Part 2: Determination of 4-aminoazobenzene derived from azo colorants	ISO FDIS 17234-2 final formal vote stage	prEN ISO FDIS 17234-2 final formal vote stage
IUC 21 (2003)	Method for the detection of certain azo colourants in dyestuff mixtures.	-	-
IUC 22 (2003)	Determination of aluminium oxide content of aluminium tanning agents	-	-
IUC 24 (2003)	Determination of basicity of aluminium tanning agents.	-	-

IU No. *	Method name	ISO Standard *	EN Standard *
IUC 25	Determination of penta-chlorophenol content	ISO 17070:2007**	EN ISO 17070**
IUC 26	Determination of free-formaldehyde content in leather processing chemicals	ISO 27587:2009	EN ISO 27587
IUC 27-1 (final draft)	Chemical determination of metal content. - Part 1: Extractable metals	ISO FDIS 17072-1 final formal vote stage	prEN ISO FDIS 17072-1 (final formal vote stage)
IUC 27-2 (final draft)	Chemical determination of metal content. - Part 2: Total metal content	ISO FDIS 17072-2 final formal vote stage	prEN ISO FDIS 17072-2 (final formal vote stage)
IUC 28 (draft in preparation)	Determination of free and ethoxylated nonylphenois in leather	ISO/NP 13364 (draft in preparation)	prEN ISO/NP 13364 (draft in preparation)
IUC 29 (final draft)	Eetermination of preservative content (TCMTB-OPP-CMK-OIT) in leather	ISO FDIS 13365 final formal vote stage	prEN ISO FDIS 13365 (final formal vote stage)
IUC 30 (draft in preparation)	Determination of chlorinated hydrocarbons in leather	ISO/NP 13382 (draft in preparation)	prEN ISO/NP 13382 (draft in preparation)
IUC 31 (draft in preparation)	Determination of organo-tin compounds in leather by GC/MS method	(draft in preparation)	(draft in preparation)
IUC 32 (final draft)	Quantitative analysis of tanning agents by filter method	ISO FDIS 14088 final formal vote stage	prEN ISO FDIS 14088 (final formal vote stage)

****Standard is at present undergoing revision following a systematic review and an up-dated version is in preparation**

IULTCS - PHYSICAL TEST METHODS:

IU No.	Method name	ISO Standard	EN Standard
IUP 1 & IUP 3	Sample preparation and conditioning	**ISO 2419:2006	**EN ISO 2419

IU No.	Method name	ISO Standard	EN Standard
IUP 2	Sampling location (same as IUC 2)	ISO 2418:2002	EN ISO 2418
IUP 4	Measurement of thickness	ISO 2598:2002	EN ISO 2589
IUP 5	Measurement of apparent density	ISO 2420:2002	EN ISO 2420
IUP 6	Measurement of tensile strength and percentage elongation	**ISO 3376:2002	**EN ISO 3376
IUP 7	Measurement of static absorption of water	ISO 2417:2002	EN ISO 2417
IUP 8	Measurement of tear load - Double edge tear	ISO 3377-2: 2002	EN ISO 3377-2
IUP 9	Measurement of distension and strength of grain by the ball burst test	ISO 3379:1976	-
IUP 10-1	Water resistance of flexible leather. Part 1: Linear compression method (Penetrometer)	**ISO 5403-1:2002	**EN ISO 5403-1
IUP 10-2 (draft out for comments)	Water resistance of flexible leather. Part 2: Angular compression method (Maeser)	**ISO 5403-2:2002	prEN ISO DIS 5403-2 (draft out for comments)
IUP 11	Measurement of water resistance of heavy leather	**ISO 5404:2002	**EN ISO 5404
IUP 12	Measurement of resistance to grain cracking and the grain crack index	ISO 3378:2002	EN ISO 3378
IUP13(1961)	Measurement of two dimensional extension	-	-
IUP14(1960)	Measurement of waterproofness of gloving leathers	-	-
IUP 15	Measurement of water vapour permeability	**ISO 14268:2002	**EN ISO 14268
IUP 16	Measurement of shrinkage temperature up to 100^0C	ISO 3380:2002	EN ISO 3380
IUP17(1966)	Assessment of the resistance of air dry insole leathers to heat	-	-
IUP18(1969)	Resistance of air dry lining leathers to heat	-	-
IUP19(1969)	Resistance of air dry upper leather to heat	-	-

IU No.	Method name	ISO Standard	EN Standard
IUP 20	Determination of flex resistance. Part 1: Flexometer method	**ISO 5402-1:2002	**EN ISO 5402-1
IUP21(1963)	Measurement of set in lasting	-	-
IUP22(1963)	Assessment of scuff damage by use of the viewing box	-	-
IUP23(1963)	Measurement of scuff damage	-	-
IUP24(1964)	Measurement of surface shrinkage by immersion in boiling water	-	-
IUP26(1993)	Measurement of resistance to abrasion of heavy leather	-	-
IUP28(1969)	Measurement of the resistance to bending of heavy leather	-	-
IUP 29	Measurement of cold crack temperature of surface coatings	ISO 17233:2002	EN ISO 17233
IUP30(1983)	Measurement of water vapour absorption and desorption (See IUP 42)	-	-
IUP 32	Measurement of area	ISO 11646:1993	EN ISO 11646
IUP 35	Measurement of the dimensional stability for leather (Old title: Measurement of dry heat resistance of leather	ISO 17227:2002	EN ISO 17227
IUP 36	Measurement of leather softness	**ISO 17235:2002	**EN ISO 17235
IUP 37	Measurement of water repellence of garment leather	ISO 17231:2006	EN ISO 17231 (former EN14340:2002)
IUP 38	Measurement of heat resistance of patent leather	ISO 17232:2006	EN ISO 17232 : 2009 (former EN 13540)
IUP 39	Measurement of flex resistance. Part 2: Vamp flex method	**ISO 5402-2 (former ISO 22288:2006)	**EN ISO 5402-2(former EN ISO 22288:2009)
IUP 40	Measurement of tear load - Single edge tear	**ISO 3377-1:2002	**EN ISO 3377-1
IUP 41	Measurement of surface coating thickness	**ISO 17186:2002	**EN ISO 17186
IUP 42	Measurement of water vapour absorption	ISO 17229:2002	EN ISO 17229

IU No.	Method name	ISO Standard	EN Standard
IUP 43	Measurement of extension set	ISO 17236:2002	EN ISO 17236
IUP 44	Measurement of stitch tear resistance	ISO 23910:2007	EN ISO 23910
IUP 45	Measurement of water penetration Pressure	ISO 17320:2006	EN ISO 17230 (former EN 14289:2003)
IUP 46	Measurement of fogging characteristics	ISO 17071:2006	EN ISO 17071 (former EN 14288:2003)
IUP 47	Measurement of resistance to horizontal spread of flame	ISO 17074:2006	EN ISO 17074 (former EN 14326:2003)
IUP 48-1	Measurement of abrasion resistance. Part 1: Taber method	**ISO 17076-1:2006	**EN ISO 17076-1 (former EN 14327:2003)
IUP 48-2 (final draft)	Measurement of abrasion resistance. Part 2: Martindale ball plate method	**ISO FDIS 17076-2- (final formal vote stage)	prEN ISO FDIS 17076-2 (final formal vote stage)
IUP 49 (Draft: 2002)	Measurement of bagginess	-	CEN/TS 14689:2006
IUP 50 (final draft)	Determination of soiling. Part 2: Tumbling method	ISO FDIS 26082-2 (final formal vote stage)	prEN ISO FDIS 26082-2 (final formal vote stage)
IUP 51 (Draft: 2002)	Measurement of Surface Friction	-	-
IUP 52 (Draft: 2002)	Measurement of Compressibility	-	-
IUP 53-1	Determination of soiling. Part 1: Martindale method	**ISO 26082-1-1:2007	**EN ISO 26082-1
IUP 54 (final draft)	Determination of flexural properties	ISO FDIS 14087 (final formal vote stage)	prEN ISO FDIS 14087 (final formal vote stage)

****Standard is at present undergoing revision following a systematic review and an updated version is in preparation**

IULTCS - FASTNESS TEST METHODS:

IU No.	Method name	ISO Standard	EN Standard
IUF 105 (1966)	Numbering code for fastness tests		
IUF 120 (1966)	General principles of colour fastness testing of leather	***ISO 105-A01:2010	***EN ISO 105-A01
IUF 131 (1966)	Grey scale for assessing change in colour	***ISO 105-A02:1993 (incl. later amendment)	***EN ISO 105-A02
IUF 132 (1966)	Grey scale for assessing staining	***ISO 105-A03:1993 (incl. later amendment)	***EN ISO 105-A03

IU No.	Method name	ISO Standard	EN Standard
IUF 151 (1975)	Preparation of storable standard chrome grain leather for dyeing	-	-
IUF 201 (1966)	Approximate determination of the solubility of leather dyes	-	-
IUF 202 (1966)	Fastness to acid of dye solutions	-	-
IUF 203 (1966)	Stability to acid of dye solutions	-	-
IUF 205 (1972)	Stability to hardness of dye solutions	-	-
IUF 401 (1972)	Colour fastness of leather to light: Daylight	***ISO 105-B01:1994 (incl. later amendment)	***EN ISO 105-B01
IUF 402 (1975)	Colour fastness of leather to light: Xenon lamp	***ISO 105-B02:1994 (incl. later amendments) (Revision in progress)	***EN ISO 105-B02
IUF 412	Change of colour with accelerated ageing.	**ISO 17728:2005	**EN ISO 17228
IUF 420	Colour fastness to water spotting	ISO 15700:1998	EN ISO 15700
IUF 421	Colour fastness to water	**ISO 11642:1998	**EN ISO 11642
IUF 423	Colour fastness to mild washing	ISO 15703:1998	EN ISO 15703
IUF 426	Colour fastness to perspiration	**ISO 11641:1993	**EN ISO 11641
IUF 434	Colour fastness of small samples to solvents	ISO 11643:2009	EN ISO 11643
IUF 435	Colour fastness to machine washing	ISO 15702:1998	EN ISO 15702
IUF 441 (1972)	Colour fastness in respect of staining raw crepe rubber	-	-
IUF 442	Colour fastness to migration into plasticised poly(vinyl chloride)	ISO 15701:1998	EN ISO 15701
IUF 450	Colour fastness to cycles of to-and-fro rubbing	**ISO 11640:1993	**EN ISO 11640
IUF 452	Colour fastness to crocking	ISO 20433:2005	-
IUF 454 (1975)	Fastness to buffing of dyed leather	-	-
IUF 458 (1984)	Colour fastness of leather to ironing	-	-
IUF 470	Leather test for adhesion of finish	ISO 11644:2009	EN ISO 11644

The following textile fastness Standards do not have equivalent IU leather test methods but are recommended for use as the International Standard for leather.

-	Instrumental assessment of the degree of staining of adjacent fabrics	ISO 105-A04:1989	EN ISO 105-A04
-	Instrumental assessment for change in colour for grey scale	ISO 105-A05:1996	EN ISO 105-A05
-	Colour fastness & ageing to artificial light at high temperatures: Xenon	ISO 105-B06:1998 (incl. later amendment)	EN ISO 105-B06
-	Oil repellency - Hydrocarbon resistance test	ISO 14419:1998 (incl. later amendments (Revision in progress))	EN ISO 14419

(To be continued to next issue)

BEEF BAN LAW ; ACTIVISTS URGE FADNAVIS TO APPROACH SC

A month after the Bombay high court struck down two sections of the Maharashtra Animals Preservation (Amendment) Act, which criminalized possession of beef of animals slaughtered outside the state, some activists here have urged Chief Minister Devendra Fadnavis to challenge the decision in the Apex Court.

The High Court had last month struck down two sections – 5D and 9B – of the Act, which criminalized possession of beef of animals slaughtered outside Maharashtra, while upholding the ban on slaughter of bulls and bullocks in the state. Soon after the court order, Fadnavis had said that if required, the government would approach Supreme Court against the high court decision of striking down the "unconstitutional sections" of the Act.

Animal rights activist Siddh Vidya, in an email to CM, on Wednesday urged him to move the Apex Court. "Please take a very serious note of the fact that with the removal of the said two sections from the statute book, the entire Act has become toothless". She said in the email.

"Removal of sections 5D from the statute would provide cover to offenders who would slaughter cow progeny in Maharashtra and defend themselves with an excuse that it was slaughtered outside the state", she said. Another animal rights activist Chetan Sharma said he has also requested the chief minister to act on the issue at the earliest.

(Millenium Post.16.6.16)

WOMEN WORKERS EXPLOITED IN INDIA'S HIGH END SHOE INDUSTRY

India (Thomson Reuters Foundation) – India's growing shoe industry relies on women who work from home, earn less than the minimum wage and lack any legal rights, activists said, urging companies importing from India to check their supply chains for signs of labour exploitation. Ambur town in the southern indian state of Tamil Nadu is one of the centers of India's export footwear industry, and has one of the highest concentrations of homeworkers in the country. While factories in the area employ people at higher salaries to assemble the shoes, manufacturers find it cheaper to outsource the labour intensive process of stitching uppers to women who work from home, using middlemen, the campaigners said."

By doing this, they circumvent all labour norms that would ensure that the homeworkers had guaranteed work and basic rights under Indian labour news, "Gopinath Parakuni, General Secretary of Cividep India, told the Thomson Reuters Foundation on Monday."They don't even get the minimum wage of 126 Indian rupees ($1.91) guaranteed by the Tamil Nadu government", he added. "These women from poor and marginalized communities … are part of a clandestine production that exploits their vulnerability", said Parakuni, who campaigns on workers' rights and corporate accountability. The women, part of a global supply chain making high end shoes, are paid less than $0.14 per pair of shoes, which are sold in Britain for between $60 and $140, according to a joint report published last month by Cividep India and British NGOs, Homeworkers Worldwide and Labour behind the Label.

The work requires women to sit on the floor, crouched over shoes for long hours, repeatedly pulling a needle through a tough leather. They suffer neck, back and shoulder pain, problems with eyesight and chronic headaches, and injuries to their hands and fingers, the report said. "At times I work late at night. But when I do so, I can't work the next day, my fingers are swollen", homeworker Sumitra told the report's authors. "After I complete a pair, it takes about an hour for my hands to return to their normal condition", she said. "No way is stiching this upper good work ... We develop pain in the chest. Our hands get infected because of the germs in the leather. I also developed fibrosis because of this work", she added. Despite the poor pay and working conditions, the women told the report's authors they felt they had little choice because their family responsibilities meant they were unable to work away from home.

For those who were widowed or had a sock husband, the work provided the family's only source of income. India is the world's eighth largest exporter of footwear. Between 2012 and 2014, footwear exports in India grew by over 50 per cent, with 200 million shoes exported worldwide in 2014, according to the report. The campaigners are urging companies sourcing leather and leather products from India to carefully map their supply chains, from the processing of leather to the final product. The NGOs contacted 14 companies for a response on what they were doing to address the risks in their supply chains. Some acknowledged the problem and others gave few ails.

The NGOs said, "India's footwear industry is not unique – shoe industries in many countries rely on homeworkers providing low-cost flexible labour." From Portugal to Bulgaria, from Eastern Europe to North Africa to India, homeworkers are to be found in the shoe supply chain and experience similar working conditions whatever the location," the report said. ($1 = 66.0533 Indian Rupees).

(Reporting by Anuradha Nagaraj, Editing by Alex Whiting; Please credit the Thomson Reuters Foundation, the charitable arm of Thomson Reuters, that covers humanitarian news, women's rights, trafficking and climate change. Visit www.trust.org) Join conversation about this story Culled from Net).

LEATHER EXPORTS MAY TAKE A BEATING

The post-Brexit volatility of the Pound, and the impact on the Euro, are the immediate concerns for the domestic leather sector. India is among the largest leather exporters to the EU and the UK, the largest market in the Union.

The long-term clarity will take about two years to emerge, as negotiations take place on the terms under which the UK will wean itself away from the EU, said industry representatives. The UK accounts for about 12 per cent of India's $5,854 million in leather and leather product exports, according to official statistics.

Refeeque Ahmed, Chairman, Council for Leather Exports, pointed out that the British currency has depreciated over 8 per cent. Leather and leather goods export prices will have to be hiked proportionately to offset the devaluation.

"But can the UK consumers absorb this hike in the backdrop of the shaky market conditions," he wondered. Habib Hussain, Chairman, Leather Sector Skill Council, said export prices will be

impacted as the Pound takes a hit and the Euro is impacted. "Currency is the immediate worry", he said.
Export units in North and East India, which cater primarily to the UK, could be relatively more impacted compared with those in the South, which cater to Italy and Germany.

GOVT MAY GUIDE ELECTRONICS, LEATHER, BIGGIES TO SET UP SHOP IN COASTAL SEZs

The government is considering to handhold some big players in the labour intensive sectors like garments, leather and electronics to set up shops in coastal Special Zone (SEZs).

The idea is to help them set up units at the three ports, which may yet to be identified, so that these big players build on ecosystems where they create jobs and manufacture products that would cater to both domestic and market markets.

India is adding nearly 12 million people to the job markets every year and more than 65% of its population is below the age of 35.

(Economic Times.28.6.16)

KENYA TO BAN IMPORTS OF LOW QUALITY LEATHER

The country plans to put in place rules to ensure that all leather imports meet quality standards.

Ministry of Industry, Investment and Trade Leather Sector Advisor Yassin Awale said the ministry is working closely with the Kenya Standards of Bureau to ensure low quality leather products won't enter the local market.

"Artificial leather imports are sold cheaply in Kenya and is affecting the performance of the local leather industry", Mr. Awale commented.

The same source believes that the country's leather industry is facing unfair competition since the public is not able to distinguish between leather and artificial leather product, and as such the ministry is conducting public awareness campaign on the differences between leather and artificial leather products.
That East African country is focusing on reviving its leather sector through the use of a cluster approach.

The government is also investing in a leather industrial park on the outskirts of the capital, which will include treatment plant, with an aim to mitigate the negative environmental effect of chemicals used in leather treatment.

(TAGS : Leather, Production, Kenya)

EIGHT (8) QUESTIONS THAT CAN TAX YOU WHILE E-FILING YOUR RETURNS

Tax-return filing is just four days away and you must have downloaded your form and started filling out the boxes. If you are self-filing for the first time, you can have a bunch of questions. While you would find answers to most of your tax-related queries easily- either an online guide or a qualified friend may help - there will be questions that are usually considered so obvious that most experts forget to answer.

Here are answers to eight commonly-asked queries that you were too embarrassed.

1. Have not filed ITR for past two years. Can I file now?

Among reasons given by people who missed filing returns in the past is they did not know they were supposed to file tax returns. Others say they were on a sabbatical and not earning, and hence the gap in their ITRs. Or they were so busy that they simply forgot to file.

Some of these defaulters may have received a notice from the tax department. Others shy away from making amendments as they feel a correction will call for scrutiny and fetch a notice. However, the reverse is true. "It's a myth that those who start filing after a gap will receive notices. In fact, chances of getting a notice are higher if you do not make corrections," says Archit Gupta, CEO, ClearTax.in.

The tax department does not want to harass a taxpayer who is willing to comply. Through a recent circular, the CBDT gave a chance to taxpayers to complete pending ITR V verifications for previous six assessment years. You don't have to worry even if you have never filed a tax return or have missed filing in the past couple of years. Make a fresh start this year.

2. What all should I include under interest income?

All taxable interest income needs to be declared in your ITR! Remember this one simple rule and you will never make a mistake. To know which all interest income are taxable, refer to the following table.

WHICH INTEREST INCOME TO DECLARE?

Type of interest income	Taxability	Deduction Available
Fixed deposit interest	Yes	Fully taxable
Saving bank account interest	Yes	Eligible for exemption under section 80TTA*
Recurring deposit interest	Yes	Fully taxable
Five-year tax saver fixed deposit interest	Yes	Fully taxable
Post office savings account interest	Yes	Eligible for deduction under section 80TTA*
Post office term deposit interest	Yes	Fully taxable
Post office recurring deposit interest	Yes	Fully taxable
Kisan Vikas Patra	Yes	Fully taxable
NSC interest	Yes	Eligible for deduction under section 80C
Corporate fixed deposit interest	Yes	Fully taxable
Corporate bonds interest	Yes	Fully taxable
Sovereign Gold Bonds interest	Yes	Fully taxable
Capital gains bonds	Yes	Fully taxable
Tax free bond interest	No	Not taxable
PPF interest	No	Not taxable

*Exemption allowed up to ₹10,000 under section 80TTA **Allowed as deduction under section 80C SOURCE: CLEARTAX.IN

The confusion often arises because some of of the taxable interest income, like interest on NSC and interest earned on savings account in bank or post office are eligible for deduction. But you need to declare these incomes too and then claim the deduction under a separate section to reduce your tax liability. While investment in five-year FDs are eligible for tax benefits, the interest earned on it is fully taxable.

3. Do I need to report all my bank accounts?

Last year, the government made it mandatory to list all bank accounts in the ITR form. A common query is whether one needs to report every single account including those that are no longer active. The answer to that question depends on how long the account has been inactive. "It is not compulsory to provide details of accounts which are dormant. So, one can omit giving details of those accounts which have been in operational for the past 36 months, since those are considered dormant," says Gupta.

RBI norms say an account becomes dormant if a customer does not initiate transactions such as withdrawal of cash at a branch or ATM, cheque payment, transfer of funds through Netbanking, Phonebanking or ATMs.

An account is called inactive if it is not used for 12 months and has to be listed. If you get dividends or the proceeds of your fixed deposit, the account is considered operational even if you haven't deposited or withdrawn cash. It will be treated as inoperative only after two years from the date of the last credit entry provided there is no other customer-induced transaction.

4. Is it necessary to provide Aadhaar card details?

While it is not mandatory to provide your Aadhaar details, it is good if you link the two. For one, your e-verification process for ITR V becomes easier. However, before you link, make sure that your Aadhaar and PAN card details match. In case they don't, save the task for later. A mis-match in the two documents can create unnecessary complications.

5. Which is the correct address to provide in ITR?

It is not uncommon to have three to four different addresses quoted at various places. Addresses in your voter's ID, bank account, Aadhaar card and PAN records may not match and all be different.

Some of you may even have office addresses in your bank records. Which address should you provide in your ITR? Technically, you could provide any. The income-tax department now corresponds over email and text messages and any communication from them would be delivered to you electronically. However, some taxpayers still have been receiving communication over post too. So, to be on the safer, provide an address where you currently receive your mails. "It is advisable to give address of the place where you currently reside," says Gupta.

6. Why is there a tax due even after TDS was deducted?

Your employer has been deducting tax every month. Even the bank has been crediting interest income after deducting taxes. And you do not have any other source of income. Yet, the screen shows a tax due. In the case of salary income, this may be because you forgot to declare an additional source of income: say, from a previous employer.

Your employer deducts TDS based on the tax slab you fall, which is based on your annual income. However, if you haven't declared your investments or income from a previous employer, the calculations go wrong. But at the end of the year, when you add up your income details in your ITR, the calculator shows an outstanding liability.

For those of you, who have a large interest income, the outstanding tax liability is because TDS is deducted at 10%. "Banks do not know your slab and they deduct TDS at 10% from deposit incomes, which may lead to a tax due in your return if you belong to the 20% or 30% tax slab," explains Gupta. Also, savings account interest is not subject to TDS. If you have income exceeding Rs 10,000 from your savings account, you are likely to see a tax due in your return.

7. What to do if I have filed an erroneous return?

One of the advantages of filing your return on time is that you are allowed to revise it any time you want. If you have not verified your ITR V yet, you can just refile. "If you have discovered an error immediately after filing, it is advisable that you do not verify such a return as your tax processing starts only after ITR V has been verified," says Gupta. Even if you have verified, you can file a revised return under Section 139(5) with correct particulars.

8. How do I know that ITR has been filed successfully?

If you are filing on the last day, there might be delays as servers are overloaded. So, make sure that you have received an acknowledgement number from the tax department. This acknowledgement is sent on your registered email.

Look for an email from DONOTREPLY@incometaxindiaefiling.gov.in with subject 'Confirmation on Submission of IT Return'. The ITR V is usually attached that states the acknowledgment number. If you do not get this email, it could be that your return was not submitted successfully and you may have to refile. You still have to verify your ITR V. You can verify either electronically or mail the signed ITR V to the processing centre within 120 days of filing the return.

WHAT YOU MAY LOSE IF YOU DO NOT FILE YOUR INCOME-TAX RETURN BY JULY' 31ST

The due date for filing income tax return for individuals-July 31 - is fast approaching but several people think that if one has paid all one's taxes there is no adverse consequence even if one misses the tax return filing deadline. However, this is not correct. Even if all your taxes have been paid you would still lose out on certain benefits if you do not file your income tax return by the due date.

Cannot revise a belated return

"If you file your income tax return for FY 2015-16 after the due date you cannot file a revised return later in case you discover a mistake in the one originally filed", says Kuldip Kumar, Partner and Leader Personal Tax, PwC. This essentially, means that in case you discover that you had forgotten to declare some income in the return or made a wrong statement and you later wish to file a corrected or 'revised' return you cannot do so for FY 2015-16 in case the original return is belated, he explains. In such a case, if your mistake is discovered by the income tax assessing officer then he would not accept a 'revised return' and the mistake would be penalised as per rules. In effect you lose the facility of admitting to a mistake on your own and correcting it without being penalized - wherever a penalty is applicable.

The rule that belated returns cannot be revised comes from Section 139(5) of the Income Tax Act. However, it is to be noted that this section has been amended - w.e.f. April 01, 2017 - by Budget 2016 to allow even those who file a belated return to revise that return later. So it would be possible to revise belated returns filed after 1.4.2017 i.e. for FY2016-17 but returns filed for FY 2015-16 are not covered under this amended provision. Hence, there is no scope of revising a return filed after the due date July 31, 2016 for the FY 2015-16, clarifies Kumar.

Loss in interest on refunds

In case you claim a refund in your return of any advance tax paid/TDS, you would lose some of the interest (currently 6% per annum paid by the tax department) on such refund. The interest on refund is normally computed from April 1 of the assessment year (the year immediately following the financial year for which the return is filed) till the date of grant of refund, says Kumar. However, in case of a belated return (i.e. return filed after due date) interest is computed from the actual date of filing the return till the date when refund is granted. This means loss of the interest that would have been paid for the period April 1 till date of filing the return. Even if you file the return one day after the due date you would be losing interest for at least four months - April, May, June and July (presuming due date is not extended beyond July 31).

No carry forward of losses

If you file a belated return you cannot carry forward losses (except loss from house property). "Losses under the following heads of income: Income from business and profession including speculation business, capital gains, and income from other sources cannot be carried forward in case a belated return is filed by the tax payer. The return filer will not be allowed to carry forward these losses even if all taxes have been paid in time if the return is belated," says PwC's Kumar.

Delayed return where tax remains unpaid

If you have any unpaid tax liability, filing your return after the due date would result in levy of penal interest @ 1% per month from the due date of filing the return till the actual date of filing. This would be a heavy and avoidable payout. What is more, tax authorities can initiate prosecution if the return is delayed beyond the relevant assessment year and the amount of unpaid tax exceeds Rs. 3,000, he adds.

If return is not filed even by end of relevant Assessment Year

If you do not file your tax return even by 31st March of the relevant assessment year (i.e. the year immediately after the financial year for which the return is to be filed) but no taxes are due, a penalty of Rs. 5,000 can be levied by the tax authorities if you are unable to provide a reasonable cause for the delay, Kumar adds.

(Source - The Economic Times - 01/08/2016)

MANUFACTURING SECTORS GROWTH HITS 4-MONTHS HIGH IN JULY' 2016 – PMI

Manufacturing sector in India continued with its uptrend and hit a four-month high in July, backed by stronger upturn in new business orders, while subdued inflationary pressure may prompt RBI to reduce key policy rate, a monthly survey said.

The Nikkei Markit India Manufacturing Purchasing Managers' Index (PMI) — a composite indicator of manufacturing performance — rose to 51.8 in July from 51.7 in June.

A reading above 50 denotes expansion while one below means contraction. "India's manufacturing economy is reviving at the beginning of the second half of 2016 after the slowdown seen in April-June quarter, as growth of both production and new orders continues to strengthen in July," Pollyanna De Lima, Economist at Markit and author of the report, said.

Supported by greater demand from both domestic and external markets, total new business rose at the fastest pace since March. Although output expanded at the fastest rate since March and backlog accumulation intensified, businesses refrained from creating jobs. Only 1 per cent of surveyed companies took on additional workers in July, while almost all the remaining respondents signalled no change in payroll numbers.

"The ongoing muted trend for employment indicates that companies remain somewhat uncertain regarding the sustainability of the upturn," Ms. Lima added. Meanwhile, the depreciation of the rupee supported Indian exporters as survey data pointed to the quickest rise in new business from abroad since January.

Offering respite to firms, cost burdens rose at a modest and slower rate and the improving demand environment meant that businesses were able to raise their own charges in July. "With inflation rates remaining lower than their respective long-run averages, it wouldn't be surprising to see the RBI loosening monetary policy at its August meeting in an effort to encourage investment," Ms. Lima added.

In its policy review meet in June, RBI Governor Raghuram Rajan kept interest rates intact, citing rising inflationary pressure, but hinted at a reduction later this year if a good monsoon helped ease inflation. The industry is still hopeful of further rate reduction from the apex bank to boost investment.

(Source – The Hindu – 01/08/2016)

Since 1950

LESA

LEATHER SCIENCE ABSTRACTS

VOLUME 49 **NUMBER 07** **JULY, 2016**

NATIONAL INFORMATION CENTER FOR LEATHER & ALLIED INDUSTRIES (NICLAI)
NATIONAL INFORMATION SYSTEM FOR SCIENCE & TECHNOLOGY (NISSAT)

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LEATHER SCIENCE AND TECHNOLOGY

LEATHER INDUSTRY. HISTORY. MANAGEMENT. ECONOMICS. EDUCATION

49.14777

Indian coal industry : Policy clarity need of the hour. Care Research Division, M/s. Credit Analysis & Research Limited, No. : 90, Anna Road, Chennai-600 002, India). (Chem. Wkly.; 39, 30; 2014, Mar., 4; 191-3).

Very strongly stresses a clear-cut clarity of the policy, for the coal industry in India, which is being treated as absolutely essential for its development. (2 Tab.; 1 Fig.; 3 Photos).

49.14778

Shale gas-Industry revolution or public revolt? TAYLOR (P), (M/s. AspenTech, No. : 2500 City West Building, Suite 1500, Houston, Texas 77042, USA). (Chem. Wkly.; 59, 30; 2014, Mar., 4; 209-10).

The energy landscape is witnessing a revolution. Shale gas exploration and production is playing an increasing role on the global stage and the energy market is being transformed. Shale is the center of discussion as an energy source with proven commercial potential, whereas conventional oil and gas were once dominant, but also of much public controversy. The story of shale gas drives much debate as it is viewed quite differently depending on the community. It is an energy bonanza for commercial growth for some while for others a source of serious concern regarding its environmental impact. Stressed the need, of a clear strategy for helping all parties to resolve their differences. Discussed the revolution, which is developed by the technology and the role, which is played by the state-of-the-art software. Global shale gas propagation has opened opportunities for many countries to review their energy strategy and chemical feedstocks. The revolution in technology has provided great wealth for the process industry. The revolt, from the public has paved for the debate on shale gas, keeps continuing without any possibility for an end to it.

49.14779

Galactomannans : Addressing demand-supply disparities. MATHUR (P), MATHUR (NK), (No. : 54, Devnagar, Jodhpur-342 008, Rajasthan State, India). (Chem. Wkly.; 58, 44; 2013, Jun., 11; 205-7).

Discussed the disparities, that are prevailing at present in the demand-supply of guar gum. Described the two types of industrially produced galactomannans namely Locust Bear Gum(LBG) and tara gum(TG). Described also the different types of galactomannans namely Fenugreek gum(FG), Cassia gum(CG) and Sesbania bispinose gum(SBG) as well as gelling gums(GG). Provided some suggestions, to address the demand-supply mismatch of certain galactamannans. (1 Tab.; 2 Photos).

49.14780

Lichens of commercial importance in India. SHAH (NC), (MS-78; Sector "D", Aliganj, Lucknow-226 024, Uttar Pradesh State, India). (Scitech J.; 1, 2; 2014, Feb.; 32-6).
Dealt the lichens, in the world, the species, of lichens, which are collected and traded from the northern part of India. Discussed the method of its collection, trade and marketing along with their various uses in perfumery, as an ingredient in the spices and condiments, in the traditional systems of medicines, e.g. Unani and Ayurveda, in curing of toleacco and as an ingredient in "Haven Samigri". Reviewed the first description of Indian lichens with their botanical names, chemical constituents and lastly characterization of lichens collected, traded and marketed from Uttarakhand. (27 Ref.; 1 Tab.; 4 Fig.).

49.14781

Follow the herd. TOMKIN(M), (Stahl, No. : 1635 Woods Drive, Los Angels, California 90065, USA). (Leather Int'l; 215, 4838; 2014, Mar.; 6 & 8).

Sustainability for the leather and leather chemical industry is at the heart of good business practice. Expounded the way, the company is looking to the future of Corporate Social Responsibility(CSR) and how other companies in the leather industry can benefit from following suit. (1 Photo).

49.14782

Tick-tock-time to drive profitability : Characterise and analyse crude assay data with breakthrough technology. PATIL (S), (APAC, M/s. AspenTech, Bhekaraj Nagar Road, Phursungi IT Park, SP Infocity, Pune-412 308, Maharashtra State, India). (Chem. Wkly.; 59, 32; 2014, Mar., 18; 187-9).

Feedstock assay data are an important tool in the refining process. Liquid feedstock are depending on the future oil prices and other routes to petrochemicals are the subject for scrutinity and as well as assessed according to their technical and environmental safety and feasibility as the time is slowly shifting with regard to the attractiveness of certain feedstocks. Times are changing as shifting feedstock state creates challenges and opportunities for the industry. Companies are faced with increased global economic challenges, dynamic market conditions and pressure to reduce time-to-market. Refining and petrochemical companies are improving feedstock selection by implementing cutting edge software, so that users can integrate crude assay libraries and links to LP planning tools for better crude selection, planning and scheduling of operations-all in an effort to maximize plant performance and business profitability. Discussed the ability, of enlightened organization for using these tools in order to make faster decisions, take advantage of both purchase and sale opportunities, reduce economic uncertainty and gain a competitive advantage.

49.14783

Industrial ethanol buyers-Beware of the growing fuel ethanol demand. NARAYANASAMI (A), (M/s. Beroe Inc., Ground Floor, ASV Chandilya Towers, Rajiv Gandhi Road(Old Mahabalipuram Road), Thuraipakkam, Chennai-600 097, India). (Chem. Wkly.; 59, 33; 2014, Mar., 25; 193-8).

India is yet to implement the 5% blending of ethanol in petrol, on a complete scale even after ten years since proposing the ethanol mandate. However, with the growing crude oil import bill, the Indian government is trying to vigorously implement the mandate this year(FY 2013-14). This diversion of domestic ethanol towards the fuel sector brings forth the question of what impact the mandate would have on other downstream sectors that rely on ethanol. A question is asked about will there be sufficient volumes of ethanol left for the potable and industrial sectors after catering to the increased demand from the fuel sector. (13 Ref.; 2 Tab.; 5 Fig.; 1 Photo).

49.14784

Economics of energy in India. TANNAN (SK), (Senior Faculty, Raffles University Neemrana, Japanese Zone, National Highway No. : 8, Neemrana-301 020, Behror Tehsil, Alwar District, Rajasthan State, India). (Chem. Wkly.; 59, 30; 2014, Mar., 4; 203-8).

The definition of India's energy security includes the ability to reliably access requisite quantity of energy at a reasonable cost and provide clean, modern energy access to the entire population. However, this definition needs to be expanded to ensure that the production and end-use of energy should have minimum health and safety hazards. Describes in detail about the components of India's energy like petroleum, natural gas and coal. It is expected that 179 forestry proposals are awaiting clearances and if all approvals are secured on time, it can more than double its output to 1132-mt. The same lack of approvals has ensured that captive mines have been able to produce only 36-mt in 2011, compared to the target of three times the amount. (24 Ref.; 5 Photos).

49.14785

Project costing-A perspective. UPADHYE (S), (EPC & Supply Management Division, M/s. Aker Powergas Private Limited, Powergas House, Beta Building, i-Think Techno Campus, Kanjurmarg East, Mumbai-400 042, India). (Chem. Ind. Dig.; 27, 2; 2014, Feb.; 51-5).

Dealt the various project cost estimation techniques based on the stage of the project and compiled the purpose cost. Elaborated the various inputs, necessary for different kinds of project cost estimates based on end use and the accuracy level that can be expected at each stage of the project cost estimate. Focused mainly on the pre-investment and the investment phase where capital cost of the project is most relevant and demands that one has to take a critical decision after completion of pre-investment from the rest of the options. (2 Tab.).

49.14786

Preparations of nonwoven and green composites from collagen fibrous networks. LIU (C), LATONA (LP), TAYLOR (MM), (United States Department of Agriculture, Agricultural Research Service, Eastern Regional Research Center, No. : 600 East Mermaid Lane, Wyndmoor, Pennsylvania 19038-8598, USA). (J. Am. Leather Chem. Assoc.; 109, 2; 2014, Feb.; 35-40).

The disposal of solid wastes, such as trimmings and splits generated in various manufacturing processes in a tannery is a serious challenge to the hides and leather industries. Most of these wastes are transported out of processing plants for landfills, not only incurring the expense of transportation, but also creating environmental issues. The effort, that has been made by the authors to address these new challenges, is for developing new uses and novel biobased products from solid wastes to improve prospective markets for the hides and leather industries. It is hypothesized that collagen fiber networks that derived from solid fibrous wastes can be utilized to prepare high performance green composites and air filters, of which both have a great market potential. Collagen fiber networks were obtained from split hides that have been processed to remove the noncollagenous materials through the hair removal, liming and bating steps. Earlier studies were devoted to understand the effects of dehydration on the resultant fiber networks and the effects of processing steps such as bating, pickling and crosslinking treatments on the morphology and the physical properties of the fiber networks derived from un-tanned hides, which will be the starting material for constructing air filters and green composites. Focused the preparations of nonwoven and green composites derived from fiber networks. Prepared the non-woven sheets by using paper-making technology. They were then used as reinforced components to make composites-that use gelatin as the matrix. Evaluated the mechanical properties for the resultant composite and the results showed that the fiber sizes and gelatin content had significant effects on the properties of the resultant nonwoven and composites. (9 Ref.; 29 Fig.).

49.14787

Tips for effective verbal technical communications. GOYAL (OP), (Institute of Chemical Technology(ICT), Nathelal Parekh Marg, Matunga(C.Rly.), Mumbai-400 019, India). (Chem. Ind. Dig.; 27, 2; 2014, Feb.; 77-81).

Written, as well as verbal technical communications(VTC), play a key role in all technical endeavors. Currently, technologically advanced communication aids that have solved a variety of communication related problems are prevailing and have given the unprecedented speed in communication. Yet, there is scope for effectively tackling a number of other VTC related problems that are largely non-technical in nature. Enumerated some key technical pursuits and identified the non-technical problems that could be encountered while executing them as well as the solutions to these problems. (4 Tab.; 3 Photos).

49.14788

Studies on Ethiopian sheepskins as an opportunity for value addition - Part I : Histological, microscopic and chemical characterization of Abyssinian and Wanke sheepskins. MOHAMMED (H), AYSANEW (G), ARAVINDHAN (R), GNANAMANI (A), RAGHAVA RAO (J), CHANDRA BABU (NK), (Council of Scientific and Industrial Research-Central Leather Research Institute(CSIR-CLRI), Adyar, Chennai-600 020, India). (J. Am. Leather Chem. Assoc.; 109, 3; 2014, Mar.; 76-81).

The leather industry is one of the priority sectors in Ethiopia, which has been identified as potentially competitive in the global market. Ethiopian tanners face a shortage of raw material input for production of leather. The government strategically planned for importing raw skins from neighboring countries and also for effective utilization of available raw material resources in the country. About fourteen sheep breeds are recognized in Ethiopia. Wanke sheepskins, indigenous to low land of Ogaden area of Somali Region, among the available resources, take prime position on their availability. Meat of Wanke sheep is in high demand in international market, but the skin commands low price not only due to availability but also less demanded by tanners due to natural problems associated with the skin. Analyzed the histological, chemical and physical characteristics of Wanke sheepskins using various tools and techniques. This characteristic understanding of the Wanke sheepskins enable the development of process strategy to produce Wanke leathers with improved properties. (11 Ref.; 3 Tab.; 7 Fig.).

49.14789

Construction of *Trichoderma reesei* strain that turns Agar plate containing 1.0% microcrystalline cellulose(W/V) transparent. TOYAMA (H), (Department of Food Science for Health, Faculty of Health and Nutrition, Minamikyushu University, Kirishima 5-1-2, Miyazaki 880-0032, Japan). (Scitech J.; 1, 1; 2014, Jan.; 17-9).

Describes a cellulolytic fungus, *Trichoderma reesei* that possesses stable A cellulosic fungus, *Trichoderma reesei* which possesses stable cellulosic enzymes necessary for saccharification of cellulose. Therefore, this fungus is utilized for ethanol production using cellulose as energy source. However, the cost of cellulose needs to be decreased, which still remains a problem for bioethanol production. The cellulase productivity must be further increased in order to achieve it. Outlines a study that has been attempted to improve the cellulose-degrading ability of *Trichoderma reesei* using an autopolyloidation technique at lower temperature conditions. (7 Ref.; 3 Fig.).

49.14790

Enhance practical knowledge through virtual mass transfer laboratory. AGARWAL (A), UPPALURI (R), VARMA (A), (Department of Chemical Engineering, Indian Institute of Technology of Guwahati(IIT-G), Near Doul Gobinda Road, Amingaon, North Guwahati, Guwahati-781 039, Assam State, India). (Chem. Ind. Dig.; 27, 2; 2014, Feb.; 73-6).

Describes the development and use of a mass transfer laboratory via the internet. The virtual mass transfer laboratory project developed at Indian Institute of Technology in Guwahati is an initiative of the Ministry of Human Resource and Development(MHRD), Government of India. The project is an effective learning management system, which the chemical industry can implement to rigorously enhance the skill set of its employees. Aimed the provision, of a set of free, high quality web-based resources to general chemical engineering labs catering to students at the undergraduate and post graduate level as well as to research scholars through this project. Provided the Real world experiments and used the opportunities to integrate technical, analytical and creative skills to the students/researchers. The developed virtual mass transfer laboratory portal has till date been organized as a workshop at Jawaharlal Nehru Technical University(JNTU) in Kakinada and Assam Engineering College, Guwahati in India. (1 Tab.; 1 Fig.; 2 Photos).

49.14791

An overlooked obstacle today, makes you overlook your proceeds tomorrow. RAVINDRAN (VS), GIRISA KRISHNAN (J), (M/s. Caprienzymes, Plot No.: 4-B, Tamil Nadu Government Officers Colony 2nd Street, Nanganallur, Chennai-600 061, India). (Leather Age; 36, 4; 2014, Mar.; 45-6). Very strongly stresses the keen interest, on investments in most large proportions on the bio-sectors, on the parts of the bio-investors. It is expected that they should come out with novel strategies and techniques to see to that no hazardous effluent comes out of their industry and most importantly, they must design mechanisms in such a way that the wastes are being reused to themselves for their supplementary productions. Moreover, a beautiful platform has been laid for the young biotech graduates to implement all their ideas and fulfil their desires in this field. All that they must keep in mind is 'Knowledge is wealth' and understand that creating an eco-friendly environment is the only ultimate and long-lasting solution for a healthy nation. (3 Photos).

49.14792

Upholstery leather standards. BAJPAI (D), (M/s. Bureau Veritas Consumer Products Services Limited, No. : C-19, Sector-7, Noida - 201 301, Uttar Pradesh State, India). (J. Indian Leather Technol. Assoc.; 64, 3; 2014, Mar.; 307-14).

Attended the possibility, that some of the elements of this document which may be the subject of patent rights. International Organization for Standardization(ISO) shall not be held responsible for identifying any or all such patent rights. Provided a literature, on ISO 16131, which had been prepared by Technical Committee(ISO/TC) 120, Leather, Subcommittee SC2, Tanned leather and based on EN 13336 : 2004, Leather-Upholstery leather characteristics-Guide for selection of leather for furniture.

49.14793

Ethiopian blues. SETTER (S), (Leather Int'l; 216, 4838; 2014, Mar.; 18 & 20).

Discusses that the Ethiopian Government officials find themselves staring down the barrel of the attack on the country with tougher demands made of the country's tanners to modernize while meeting environmental regulations and export in unrealistic time frames. (1 Photo).

RAW HIDES AND SKINS

49.14794

Effect of acute exposure of triazophos on oxidative stress and histopathological alterations in liver, kidney and brain of Wistar rats. MOHINEESH, RAJ (J), RAJVANSHI (A), DOGRA (TD), RAINA (A), (Department of Forensic Medicine and Toxicology, All India Institute of Medical Sciences(AIIMS), Ansari Nagar, New Delhi-110 029, India). (Indian J. Exp. Biol.; 52, 8; 2014, Aug.; 814-9).

Acute dose of organophosphorus pesticide Triazophos(O,*O*-diethyl *O*-I-phenyl-1*H*-1,2,4-triazol-3-yl phosphorothioate; Tz) administered orally affects oxidative stress parameters and the histo-architecture of liver, kidney and brain tissues. The results indicate a dose dependent induction of oxidative stress as evident by increased malodialdehyde level and decreased antioxidant defense including glutathione and superoxide dismutase activity in rat liver, kidney and brain. Acetylocholinestrase(AchE) activity was found significantly decreased in the Tz treated groups as compared to the vehicle control DMSO(Dimethyl Sulfonate) group. Histopathological examination of liver, kidney and brain in Tz treated rats revealed medullary congestion and hydropic degeneration of hepatocytes in liver and medullary congestion in kidney. However, no significant histopathological changes were observed in brain tissues. (35 Ref.; 1 Tab.; 4 Fig.).

49.14795

Punarnavine, an alkaloid isolated from ethanolic extract of *Boerhaavia diffusa Linn.* reverses depression-like behavior in mice subjected to chronic unpredictable mild stress. DHINGRA (D), VELECHA (R), (Department of Pharmaceutical Sciences, Guru Jambheshwar University of Science and Technology(GJUST), National Highway-10, Rohtak-Hissar Sirsa Road, Hisar 125 001, Haryana State, India). (Indian J. Exp. Biol.; 52, 8; 2014, Aug.; 799-807).

Punarnavine(20 and 40 mg/kg) and fluoxetive(20 mg/kg) per se administered orally for 14 successive days significantly decreased immobility of both unstressed and stressed mice in forced swim test. These drugs also significantly decreased sucrose preference in both stressed and unstressed mice as compared to their respective controls, indicating significant antidepressant-like activity. The drugs did not show any significant effect on locomoter activity of mice. The alkaloid also significantly decreased monoamine oxidase(MAO-A) activity, malondialdehyde levels in both unstressed and stressed mice; and significantly reversed the stressed-induced decrease in reduced glutathione and catalase activity. It also significantly attenuated the stress-induced increase in plasma nitrite corticosterene levels. Thus,

punaravine showed antidepressant-like activity in unstressed and stressed mice possibly through decrease in plasma corticosterone levels. (38 Ref.; 2 Tab.; 7 Fig.).

49.14796

Nanogold conjugation, anti-arthritic potential and toxicity studies of snake Naja kaouthia venom protein toxin NKCT1 in male albino rats and mice. SAHA (PP), BHOWMIK (T), DASGUPTA (AK), GOMES (A), (Laboratory of Toxinology & Experimental Pharmacodynamics, Department of Physiology, University of Calcutta, No. : 92, Acharya Prafulla Chandra Road, Kolkata-700 009, India). (Indian J. Exp. Biol.; 52, 8; 2014, Aug.; 763-72).

Nanoscience and nanotechnology have found their way in the fields of pharmacology and medicine. The conjugation of drug to nanoparticles combines the properties of both. Here, gold nanoparticle(GNP) was conjugated with NKCT1, a cytotoxic protein toxin from Indian cobra venom for evaluation of anti-arthritic activity and toxicity in experimental animal models. GNP conjugated NKCT1(GNP-NKCT1), synthesized by sodium borohydride($NaBH_4$) reduction method, was stable at room temperature(25±2°Centigrade), *p*H7.2. Hydrodynamic size of GNP-NKCT1 was 68-122 nm. Arthritis was developed by Freund's complete adjuvant induction in male albino rats and treatment was done with NKCT1/GNP-NKCT1/ standard drug. The paw/ankle swelling, urinary markers, serum markers and cytokines were changed significantly in arthritic control rats which were restored after GNP-NKCT1 treatment. Acute toxicity study revealed that GNP conjugation increased the minimum lethal dose value of NKCT1 and partially reduced the NKCT1 induced increase of the serum biochemical tissue injury markers. Histopathological study showed partial restoration of toxic effect in kidney tissue after GNP conjugation. Normal lymphocyte count in culture was in the order of GNP-NKCT1ÃNKCT1ÃIndomethacine treatment. Confirmed the GNP conjugation which has increased the antiarthritic activity and decreased toxicity profile of NKCT1. (45 Ref.; 2 Tab.; 8 Fig.).

49.14797

Evaluation of a novel decorporation approach to prevent radioactivity uptake by using acidosis in experimental animals. SAXENA (P), NISHAD (DK), SINGH (T), KUMAR (A), KASHAP (R), BHATNAGAR (A), MITTAL (G), (Institute of Nuclear Medicine and Allied Sciences(INMAS), Defence R&D Organisation, Lucknow Road, Timarpur, New Delhi-110 054, India). (Indian J. Exp. Biol.; 52, 8; 2014, Aug.; 793-8).

Aimed the device, of a prophylactic and/or therapeutic approach that to be created for preventing internalization of radiothallium(^{201}TI) and more importantly by implication, its chemical analogue radiocesium(^{137}Cs) during any nuclear emergency, different ex vivo and in vivo animal models to determine the role of *p*H in absorption of ^{DD1}TI across jejunum/ muscle tissue and whole body retention of ^{201}TI respectively. Movement of TI under stimulated *p*H conditions proved that *p*H had direct influence on its adsorption. Oral intake of acidified water or parenteral administration of lactic acid was able to reduce the body burden of ^{201}TI

by upto 12 and 50% respectively. The results indicate that acidification of goat, within physiological range may be used as an option for decorporation/inhibition of incorporation of radiothallium and radiocesium, particularly in case of mass casualty. (18 Ref.; 5 Fig.).

49.14798

Comparative immunomodulation potential of *Tinospora cordifolia*(Willd.) Miers ex Hook. F., *Tinospora sinensis*(Lour.) Merrill and *Tinospora cordifolia* growing on *Azadirachta indica A. Juss*. NARKHEDE (AN), JAGTAP (SD), KASOTE (DM), KULKARNI (OP), HARSULKAR (AM), (Interactive Research School for Health Affairs(IRSHA), Bharati Vidyapeeth University, Pune Satara Road, Pune-411 043, Maharashtra State, India). (Indian J. Exp. Biol.; 52, 8; 2014, Aug.; 808-13).

Guduchi has been widely used in the traditional medicine as an immunomodulation. Description of guduchi in Ayurvedic literature resemble with *Tinospora sinensis* rather than with commonly available *Tinospora cordifolia* and hence this may be used as substitutes for *Tinospora sinensis. Tinospora cordifolia* growing on *Azadirachta indica* commonly called Neem-guduchi has more immunomodulatory potential. Thus, assessed the immunomodulatory activity of three *Tinospora spp.* by checking humoral and cell mediated immune response to the antigenic challenges with sheep red blood cells(SRBCs) and by neutrophil adhesion tests and albino Wistar rats using Guduchi-Satura, a well known dosage form. Results revealed that Neem-guduchi possesses high immunomodulatory potential at the dose of 300 mg/kg.po and validated the traditional claim. Hence, Neem-Guduchi can be employed in immunomodulatory formulation prepared using guduchi. (34 Ref.; 2 Tab.; 2 Fig.).

ENZYMOLOGY

49.14799

Protective effect of *Azadirachta indica A. Juss* against doxorubicin-induced toxicity in tumour bearing mice. KOUL (A), GOYAL (R), BHARATI (S), (Department of Biophysics, Basic Medical Sciences Block, Punjab University, Sector 14, Chandigarh-160 014, India). (Indian J. Exp. Biol.; 52, 4; 2014, Apr.; 323-31).

Doxorubicin(DOX) treatment(12 ìg/g body weight, once a week for 2 weeks) resulted in a significant decrease in the heart rate along with an increase in QRS, ST and QT intervals. Histopathological studies showed cardiomyocyte degeneration, cytoplasmic vacuolation and macrophage infiltration in cardiac issue. Observed also a marked increase in the rate of apoptois. An increased oxidative stress was evidenced by significantly higher levels of lipid peroxidation (LPO) and depletion of reduced glutathione. Observed also a decrease in the activity of cellular antioxidant defence enzymes. The heart rate and ECG (Electrocardiogram) alterations were prevented significantly by AAILE (100 ìg/g body weight, po(pounds)) co-treatment started two weeks prior to DOX treatment and continued till the termination of the experiment. The cardioprotection was also evident from histopathology and decrease in the rate of apoptosis in cardiomyocytes. AAILE(Aqueous *Azadirachta indica* leaf extract) co-

treatment also prevented DOX-induced increase in LPO and decrease in antioxidant defence enzymes. The results suggest that AAILE administration prevents DOX-induced cardiotoxicity. (48 Ref.; 2 Tab.; 11 Fig.).

49.14800

Impairment of renal structure and function following heterogeneous chemical mixture exposure in rats. MORYA (K), VACHHRAJANI (KD), (Division of Environment and Toxicology, Department of Zoology, Faculty of Science, The Maharaja Sayajirao University of Baroda, Professor Chandravadan Mehta Marg, M.S.N. Campus, D.N. Hall Campus, Pratapgunj, Vadodara-390 002, Gujarat State, India). (Indian J. Exp. Biol.; 52, 2; 2014, Apr.; 332-43). Renal structural and functional alterations following an exposure to a heterogeneous chemical mixture(HCM) of phthalic acid di butyl ester, 1,2-dichlorobenzene, cadmium chloride and chromium trioxide, administered through oral gavage in low doses(1/100 and 1/1000 of LD_{50} value of individual chemical) for 60 days, followed by withdrawal till 120 days resulted in significant rise in kidney lipid peroxidation and fall in the activities of enzymatic antioxidants. However, withdrawal of HCM treatment restored most of these altered parameters. Degenerative changes in the kidney included proximal convoluted tubules devoid of brush boarder with cytoplasmic blebbing, dissolution and sloughing of nuclei. Cortical glomeruli were also affected with epithelial disintegration, pyknosis of podocyte nucleic and mesengial cell hyperplasia. The morphological alterations recovered fully in the low dose compared to the high dose treatment group. (80 Ref.; 4 Tab.; 27 Fig.).

49.14801

Vegetable oil processing-1 : Value-added products from Ricebran oil : Options for industry-Process commercialized/developed at Centre for Lipid Research, CSIR-IICT. (Chem. Wkly.; 59, 36; 2014, Apr., 15; 205-8).
Describes in detail about a process, for enzymatic degumming of Rice bran oil(RBO) that has been commercialized and developed at Centre for Lipid Research in Council of Scientific and Industrial Research-Indian Institute of Chemical Technology(CSIR-IICT) in Hyderabad in India. (1 Tab.; 1 Fig.; 2 Photos).

49.14802

Sustainable tanning : Waste minimization in the tannery. TEGTMEYER (D), TYSOE (C), HOMBECK (M), (Lanxess AG, Headquarters, Kennedyplatz 1, 50569 Cologne, North Rhine-Westphalia State, Germany). (World Leather; 27, 2; 2014, Apr./May; 19-21).

Describes the chemical industry that has introduced many new technical solutions to the leather industry over the last few years. Most offer environmental advantage or reduced risk of harm and these advantages are set to continue. Novel enzymatic beamhouse systems and new wet white technologies in particular are two major wet-end process steps where developments have been focused. Discusses the advances in these areas that lead to more

sustainable leather articles and process conditions with a lower environmental impact. (3 Tab.; 2 Photos).

LEATHER CHEMICALS AND AUXILIARIES

49.14803

Oxidation of water under visible-light irradiation over modified $BaTaO_2N$ photocatalysts promoted by Tungston species. MAEDA (K), LU (D), DOMEN (K), (Department of Chemistry, Graduate School of Science and Engineering, Tokyo Institute of Technology, 2-12-NE-2 Ookayama, Meguro-ku, Tokyo 152-8550, Japan). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6488-91).

Describes the doping transition-metal cations that have been believed to be having partly filled d-block orbitals into semiconductor photocatalysts that results in a significant drop in photocatalytic activity in heterogeneous photocatalysts. Nevertheless, it was found that the activity for the water oxidation of $BaTaO_2N$(Barium Tantalum Oxynitride) could be improved by seven times upon modification by pentavalent W species. (24 Ref.; 3 Fig.).

49.14804

Water-induced pyroelectricity from nonpolar crystals of amino acids. PIPERNO (S), MIRZADEH (E), MISHUK (E), EHRE (D), COHEN (S), EISENTEIN (M), LAHAV (M), LUBOMIRSKY (I), (Department of Materials and Interfaces, Weizmann Institute of Science, P.O.B. 26, Rehovot 76100, Israel). (Angew. Chem.; 52, 28; 2013, Jun., 17; 6513-6).

Describes the centrosymmetric crystals of á–glycine that display an anomalous quadrupole-like pyroelectric current. This observation implies the formation of water-glycine hybrid polar layers at the (O10) faces of the á–glycine crystals. (26 Ref.; 1 Tab.; 11 Fig.).

49.14805

Highly potent and stable capped siRNAs with picomolar activity for RNA interference. WEI (L), CAO(L), XI (Z), (State Key Laboratory of Elemento-Organic Chemistry, Department of Chemical Biology, Nankai University, No. : 94 Weijin Road, Nankai, Tianjin 300071, China). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6501-3).

Describes the Hairpin-shaped ribonucleoroacids(RNAs) that were prepared using a thiol-maleimino Michael addition and exhibited good serum and thermal stability. These capped structures were shown to be cleaned by Dicer and RNA interference(RNAi) experiments which showed that RhpDNA(Right hairpin-RNA) was highly efficient at RNAi with an IC_{50} value of 6 pm. (37 Ref.; 6 Fig.).

49.14806

Rapidly reversible manipulation of molecular activity with dual chemical dimerizers. LIN (Y), NIHONGAKI (Y), LIU (T), RAZAVI (S), SATO (M), INOUE (T), (Department of Cell Biology, Center for Cell Dynamics, Johns University, No. : 725 North Wolfe Street, Baltimore, Maryland 21205, USA). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6450-4).

Describes the Rapamycin that induced the relocation of an FRB(FKB812-rapamycin-binding) fused protein of interest (POI) to the plasma membrane (labeled with the fusion protein GAIs-FKBP(FK506-binding protein)-C2(LACT)) to activate a signaling event. Subsequent treatment with a gibbrellic acid ester led to the relocation of the whole GAIs-FKBP-C2(LACT)/repamycin/FKB-POI complex to the Tom20-GID1-labeled mitochondria with the termination of POI-dependent signaling. (26 Ref.; 8 Fig.; 1 Scheme).

49.14807

â-Hairpin peptides : Heme binding, catalysts and structure in detergent micelles. MAHAJAN (M), BHATTACHARYA (S), (School of Biological Sciences, Nanyang Technological University, No. : 60 Nanyang Drive, Singapore 637551, Singapore). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6430-4).

Describes the autonomously folded designed â–hairpin peptides in detergent micelles that show penoxidase activity with heme binding. Aromatic-aromatic cross-strand packing interactions that stabilize â–hairpin structures in solution are not strictly required for the structure and activity of a â–hairpin folded in a micelle environment. (55 Ref.; 6 Fig.; 1 Scheme).

49.14808

Tetrameric in cyclic double helicates as a scaffold for a molecular Solomon link. BEVES (JE), CAMPBELL (CJ), LEIGH (DA), PRITCHARD (RG), (School of Chemistry, University of Edinburgh, The King's Buildings, West Mains Road, Edinburgh EH9 3JJ, England). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6464-7).

Describes the one-pot synthesis of a molecular Solomonlink that assembles four iron**(II)** cations, four bis(aldehyde) molecules and four bis(amine) building blocks. The process generates two interwoven 68-membered-ring macrocycles, which feature four crossing points, in 75% yield. (58 Ref.; 7 Fig.; 2 Schemes).

49.14809

LovG : The thioesterase required for dihydromonacolin L release and lovastatin nonaketide synthase turnover in lovastatin biosynthesis. XU (W), CHOOI (Y), CHOI (JW), LI (S), VEDRAS (JC), Da SILVA (NA), TANG (Y), (Department of Chemical and Biomolecular Engineering, Department of Chemistry and Biochemistry, University of California, Box 951592, No. : 5531 Boelter Hall, Los Angeles, California 90095-1592, USA). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6472-5).

Describes the cryptic thioesterase LovG that was found to be responsible for product release from the lovastatin nonaketide synthase(LNKS or LovB). LovG also helped to improve the turnover

of LovB through hydrolysis of incorrectly made intermediates, freeing LovB for another round of catalysis. (21 Ref.; 10 Fig.).

49.14810

Synergy between XANES Spectroscopy and DFT to elucidate the amorphous structure of heterogeneous catalysts : TiO_2-supported Molebdenum oxide catalysts. TOUGERTI (A), BERRIER (E), MAMEDE (A), FONTAINE (CL), BRIOIS (V), JOLY (Y), PAYEN (E), PAUL (J), CRISTOL (S),(Universite Lille 1, Unite de Catalyse et de Chimie du Solide, UMR(United Medical Resource), CRS 8181, 54655 Villeneuve d'Ascq Cedex, France). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6440-4).

Defined the molecular-scale structure of a TiO_2(Titanium oxide) supported molybedenum oxide catalyst using the 3D(3 dimension) structural characterization of the environment around Mo(Molybdenum) atoms provided by X-ray absorption near-edge structure spectroscopy and dynamic functional theory(DFT) calculations. The structure consists of Mo octahedral arranged in a six-membered ring. (31 Ref.; 10 Fig.).

49.14811

Photosensitization of DNA by 5-Methyl-2-pyrimidone deoxyribonucleoside : (6-4) photoproduct as a possible Trojan Horse. VENDRELL-CRIADO (V), RODRIGUEZ-MUNIZ (GM), CUQUERELLA (MC), LHIAUBET-VALLET (V), MIRANDA (MA), (Instituto de Tecnologie Quimica UPV-CSIC(Universitat Politecnica de Valencia, Consejo Superior de Investigaciones Cientificas, Avenida de los Naranjos, s/n, 46022 Valenica, Spain). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6476-9).

Combined agarose gel electrophoresis and photochemical studies show that 5–methyl-2-pyrimidone, the main chromophore of (6-4) photoproducts, behaves as a DNA (deoxyribonucleoro acid) photosensitizer. These results raise the question of whether the (6-4) lesions can act as a Trojan horses, enhancing cyclobutane pyrimidine dimer (CPD) formation and oxidative damage. Ref.; 4 Fig.; 1 Scheme).

49.14812

Investigation of the carboxylate position during the acylation reaction catalyzed by Biaryl DMAP derivatives with an internal carboxylate. NISHINO (R), FURUTA (T), KAN (K), SATO (M), YAMANAK (M), SASAMORI (T), TOKITOH (N), KAWABATA (T), (Institute for Chemical Research, Kyoto University, Gokasho Uji-City, Kyoto 611-0011, Japan). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6445-9).

Describes a series of biaryl DAMP(4-dimethylaminopyridine) catalysts that were prepared with an internal carboxylate and the catalytic activities of the derivatives which were evaluated to determine the carboxylate position that most accelerated the DAMP-catalyzed

acylation. The carboxylate ion proximal to the pyridine ring in a face-to-face geometry was found to act as an effective general base for the acylation reaction. (44 Ref.; 9 Fig.; 5 Schemes).

49.14813

Design, synthesis and application of a trifluoromethylated phenylalanine analogue as a label to study peptides by solid-state ^{19}F NMR spectroscopy. TKACHENKO (AN), RADCHENKO (DS), MYKHAILIUK (PK), AFONIN (S), ULRICH (AS), KOMAROV (IV), (Faculty of Chemistry, National Taras Shevchenko University of Kyiv, Volodymyrska 62[a], 01601 Kyiv, Ukraine). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6504-7).

Describes the design of a novel á–amino acid as a conformally restricted analogue of phenylalanine. It was synthesized and incorporated into the representative membrane-active peptide Magainin 2, to demonstrate its suitability for structure analysis in oriented membrane by solid-state ^{19}F nuclear magnetic resonance spectroscopy. (64 Ref.; 4 Fig.; 2 Schemes).

49.14814

Photocatalytic conversion of carbon dioxide with water into methane : Platinum and copper**(I)** oxide co-catalysts with a core-shell structure. ZHAI (Q), XIE (S), FAN (W), ZHANG (Q), WANG (Y), DENG (W), WANG (Y), (State Key Laboratory of Physical Chemistry of Solid Surfaces, Innovation Center of Chemistry for Energy Materials, National Engineering Laboratory for Green Chemical Productions of Alcohols, Ethers and Esters, College of Chemistry and Chemical Engineering, No. : 422, Siming South Road, Xiamen University, Fujian Province, Xiamen 361005, China). (Angew. Chem.; 52, 22; 2013, May, 27; 5776-9).

Describes the binary co-catalysts of Pt and Cu_2O(Platinum and copper**(I)** oxide) with a core-shell structure that significantly enhance the photocatalytic reduction of CO_2(carbondioxide) with H_2O(water) to CH_4(methane and CO(chromium). The Cu_2O shell provides sites for the preferential activation and conversion of CO_2 whereas the Pt core extracts the photogenerated electrons from TiO_2(Titanium dioxide). The deposition of Cu_2O shell on Pt nanoparticles markedly suppresses the reduction of H_2O to H_2(hydrogen). (25 Ref.; 1 Tab.; 8 Fig.).

49.14815

Bottom-Up formation of dodecane-in-water nanoemulsions from hydrothermal homogeneous solutions. DEGUCHI (S), IFUKU (N), (Institute of Biogeosciences, Japan Agency for Marine-Earth Science and Technology(JAMSTEC), 2-15 Natsushima-cho, Yokosuma 237-0061, Japan). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6409-12).
Describes the hydrocarbons and water that do not mix under standard conditions, but they do mix freely at high temperature and high pressure near the gas/liquid critical point of water(T_c=374Centigrade, P_c=22.1 MPa). Quenching of homogeneous solutions of didecane and water at such extreme conditions in the presence of a surfactant results in bottom-up formation of nanosized oil droplets in water in only 10 seconds. (20 Ref.; 8 Fig.).

49.14816

Chain-shattering polymeric therapeutics with on-demand drug-release capability. ZHANG (Y), YIN (Q), YIN (L), MA (L), TANG (L), CHENG (J), (Department of Materials Science and Engineering, University of Illinois at Urbana-Champagn, No. : 1304 West Green Street, Urbana, Illinois 61801, USA). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6435-9).

Describes the trigger-responsive chain-shattering polymeric therapeutics(CSPTs) that were prepared by condensation polymerization of an ultraviolet(UV)-or hydrogen peroxide-responsive domain and a drug as co-monomers. Drug release can be started and stopped by starting and stopping the trigger treatment. Chemotherapeutic-containing CSPTs showed trigger-responsive *in vitro* and *in vivo* antitumor efficacy. (46 Ref.; 9 Fig.; 3 Schemes).

49.14817

Mechanism of the Phospha-Wittig-Horner reaction. ARKHYPCHUK (AI), SVYASCHENKO (YV), ORTHABER (A), OTT (S), (Department of Chemistry, Angstrom Laboratories, Uppsala University, Box 523, 751 20 Uppsala, Sweden). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6484-7).

Discusses the phospha-Wittig-Homer reaction that proceeds through stepwise P-P cleavage of an oxaliphosphetane intermediate, followed by a [2,3]-sigmatropic rearrangement that paves the mechanism is this greatly different to that of its carbon analogue, that is the Hormer-Wadswoth-Emnons reaction. (41 Ref.; 1 Fig.; 4 Schemes).

49.14818

An atom-economical approach to functionalized single-walled carbon nanotubes : Reaction with disulfides. SYRGIANNIS (Z), PAROLA (VL), HADAD (C), LUCIO (M), VAZQUEZ (E), GIACALONE (F), PRATO (M), (Center of Excellence for Nanostructured Materials(CENMAT), INSTM(Institut National des Sciences et Technologies de la Mer), Unit of Trieste, Dipartimento di Scienze Chimiche et Farmaceutiche, University of Trieste, Piazzale Europa 1, 34127 Trieste, Italy). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6480-3).

Describes the single-walled carbon nanotubes which are functionalized with disulfides, including cystemine-core polyamidoamine dendrimers, simply upon heating in toluene. One advantage of this method is that any unreacted disulfide can be recovered by filtration. (32 Ref.; 1 Tab.; 3 Fig.; 1 Scheme).

49.14819

Azulenophenanthrenes from 2,2'-di(arylethynyl) biphenyls through C-C bond cleavage of a benzene ring. MATSUDA (T), GOYA (T), LIU(L), SAKURAI (Y), WATANUKI (S), ISHIDA (N), MURAKAMI (M), (Department of Applied Chemistry, Tokyo University of Science, 1-3

Kagurazaka, Shinjuku-ku, Tokyo 162-8601, Japan). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6492-5).

Describes the 2,2'-di(arylethynyl) biphenyls that undergo a skeletan rearrangement in the presence of palladium(**II**) catalyst to afford polycyclic aromatic compounds(PACs) containing an azulene unit. The reaction involves C-C bond cleavage of a benzene ring, which expands into a seven-membered ring. (38 Ref.; 1 Tab.; 1 Fig.; 3 Schemes).

49.14820

Optimizing P,N-bidentate ligands for oxidative gold catalysis : Efficient intermolecular trapping of á–Oxo gold carbenes by carboxylic acids. JI (K), ZHAO (Y), ZHANG (L), (Department of Chemistry and Biochemistry, University of California, Building No. : 232, Santa Barbara, California 93106-5210, USA). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6508-12).

Discusses the optimization of P,N-bidentate ligand(L) that reveals the importance of conformation control for intermolecular trapping of reactive á-oxo gold carbene intermediates. As a result, the highly efficient and broadly applicable synthesis of carboxymethyl ketones from readily available carboxylic acids and terminal alkynes proceeds under mild reaction conditions. (43 Ref.; 3 Tab.; 2 Fig.; 2 Schemes).

49.14821

Gold**(I)**-catalyzed cascade cycloadditions between allenamides and carbonyl-tethered alkenes : An enantioselective approach to oxa-bridged medium-sized carbocycles. FAUSTINO (H), ALONSO (I), MASCARENAS (JL), LOPEZ (F), (Centro Singular de Investigacion en Quimica Biologica y Materiales Moleculares(CIQUS) and Departamento de Quimica Organica, Universidad de Santiago de Compostela, C/Jenaro de la Fuente, s/n, 15782 Santiago de Compostela, Spain). (Angew. Chem.; 52, 25; 2013, Jun., 17; 6526-30).

Describes the allenamides that react with aldehydes or ketones having ã, ô or ° alkenyl group, upon activation with suitable gold catalysts, to provide oxa-bridged systems containing seven-to-nine-membered carbocycles, in a formal cascade cycloaddition. Discusses the possibility of the oxa-bridged seven- and eight-membered rings with good to high enantioselectivity by using chiral phosphoramidite/gold or bisphosphine/gold catalysts. (80 Ref.; 3 Tab.; 1 Fig.; 4 Schemes).

FINISHING MATERIALS

49.14822

On coloring of fish tailgraph. RAMYA (N), (Department of Mathematics, Bharath University, No. : 1330, Agharam Road, Selaiyur, Chennai, India). (Indian J. Sci. Technol.; 7, 5-Suppl.; 2014, Jun.; 3-4). Presents a coloring, star coloring, acrylic colouring of fish tail graph and gives relation between the above mention graph. It illustrates the 3 types of coloring by unique way. (3 Ref.).

49.14823

Nanocomposites-An overview. BAKSI (S), BISWAS (S), (Advanced Composites Programme Technology Information, Forecasting & Assessment Council(TIFAC), 4th Floor, 'A' Wing, Vishwakarma Bhavan, Shaheed Jeet Singh Marg, New Delhi-110 016, India). (Scitech J.; 1, 5; 2014, May; 22-30).

Nano-composites have gained much interest over the past few years. Significant efforts are underway to control the nano-structures via innovative synthetic approaches. The properties of nano-composite materials depend not only on the properties of their individual parents but also on their morphology and interfacial characteristics. Thermal stability and mechanical properties such as adhesion resistance, flexural strength, toughness & hardness can be enhanced by optimized fabrication process and controlled nano-sized dispersion. Various forms of nano particles, their structures & characterization along with the fabrication techniques of different nanocomposites using thermoplastics and thermo sets as matrices. The possibilities of producing nano materials with tailored physical & electronic properties at low cost could result in interesting applications ranging from drug delivery to corrosion prevention to electronic/automotive parts to industrial equipment and several others. Discussed several current and potential applications of nanocomposites. The cutting edge applications delivering chemotheraphy drugs in nanoparticle form for reduced side effects by targeting the drugs directly to the tumours merits special attention. (24 Ref.; 2 Tab.; 2 Fig.).

49.14824

Influence of syntan retanning on leather dyeing. BALLÚS (O), PALOP (R), (Tanned Leather Laboratory, Cromogenia Units, S.A. C/Cuarenta 14-16 Sector *E* Franca 08040, Barcelona, Spain). (Aqeic. Bol. Tecn.; 65, 2; 2014; Apr./May/Jun.; 41). (Spanish).
The main purpose of syntan retanning is to provide stuffing and compactness to the emptiest parts of the hide. Also this technique has a major influence on dye penetration. Eleven different syntan types were used in this study. Assessed the penetration power of two types of dye-a brown type of medium molecular weight and a black type of high molecular weight in terms of anionicity. There is a synergy that determines the penetration power of each type by depending on the constitutions of the dye and the syntan. Moreover, assessed also the color intensity(L*) of these dyes, colorimetrically on the grain side and their distribution (leveling) was measured by (total color) "E scattering *vs.* the untanned reference. All syntan retanning products used were shown to improve the penetration and leveling power of dyes *vs.* the untanned reference.

49.14825

Green synthesis of nanodispersed iron oxide nanoparticles for leather finishing. NIDHIN (M), ARAVINDHAN (R), SREERAM (KJ), (Chemical Laboratory, Council of Scientific and Industrial Research-Central Leather Research Institute(CSIR-CLRI), Adyar, Chennai-600 020, India). (J. Am. Leather Chem. Assoc.; 109, 6; 2014, Jun.; 184-8).

Industries worldwide, including leather, have had to phase out pigments based on lead, chromium**(VI)**, cadmium etc. due to the toxicity associated with these transition metal ions. Coupled to this phase out is also a need to enhance the functional properties of the otherwise safe pigments, with low use, so as to avoid wastage. In this direction, the use of nano pigments is slowing coming into vogue. Explored the advantages of replacing an otherwise popular brown pigment-the hematite(áFe_2O_3) with nanosized oxides in leather finishing. Any synthesis methodology for nanoparticles is sustainable only when green methods are employed for their synthesis. Adequate care is taken in employing as environmentally friendly methodology based on biocompatible polysaccharide-starch as a template. The advantages of this method, such as the monodisperse character of the oxide, low particle size, ability of the carbon residue from the template to aid easy homogenization of the pigment to the finish formulation have resulted in excellent covering of surface, improved levelness, no overloading of grain, excellent physical properties and ageing resistance. (13 Ref.; 2 Tab.; 3 Fig.).

49.14826

Butyl-3-methylinidazolium acetate as an alternative solvent for type **I** collagen. LIU (J), XU (Z), CHEN (Y), FAN (H), SHI (B), (National Engineering Laboratory for Clean Technology of Leather Manufacture, Sichuan University, Wangjiang Campus, Section No. : 24 of Southern Yichuan, Chengdu 610065, Sichuan Province, People's Republic of China). (J. Am. Leather Chem. Assoc.; 109, 6; 2014, Jun.; 189-96). Low solubility and undesirable denaturation in conventional solvent continue to represent a significant challenge for efficient extraction, accurate characterization and versatile processing of collagen. Describes the synthesis of a room temperature ionic liquid(IL), 1-butyl-3-methylimidazolium acetate([BMIM]Ac) and then evaluates as an alternative solvent for type **I** collagen. Real-time polarizing optical microscope(RPOM) observation indicated complete distingration of hierarchical structure of collagen aggregates as solubilized in [BMIM]Ac at 25°Centigrade. The solubility reached up to approximately 8.0 wt% at 25°Centigrade, more than ten times higher than that in conventional dilute acetic acid. High solubility of collagen in [BMIM]Ac at room temperature was ascribed to loose binding between [BMIM]+ and acetate, as well as strong proton-accepting ability of [BMIM]Ac, which enabled rupture of those intermolecular hydrogen bonds and ionic bonds that stabilized collagen aggregates in comparison with dilute acetic acid and recently reported chloridion ILs. However, such bond-rupturing effect was found selective at room temperature. As demonstrated by Fourier transform infrared(FTIR), circular dichroism(CD), atomic force microscope(AFM) and ultrasensitive differential scanning calorimetry(UDSC), [BMIM]Ac did not destroy the special triple-helical structure of tropocollagen molecules that had been identified as being of importance for the functional and bioactive properties of collagen. According to these results, the discovery of [BMIM]Ac as an ideal solvent for collagen may open up new possibilities for the chemistry and engineering of collagen, which has long been established as a readily accessible and renewable resource with many unique properties. (25 Ref.; 1 Tab.; 12 Fig.; 1 Scheme).

LEATHER PROPERTIES. QUALITY CONTROL

49.12827

Influence of an amphoteric retanning agent on the properties of leather-Part 1. BALLÚS (O), NOGUERA (L), MICO (R), (Cromogenia Units S.A., Carrer Núm. 42 de la Jona ranca. 2, 08040 Barcelona, Spain). (Aqeic Bol. Tecn.; 65, 4; 2014, Oct./Nov./Dec.; 109). (Spanish).
This part of the study consists of three parts such as (1) the study of a new retanning amphoteric AFF(aqueous film forming) agent as compared to a reference without the product. Study of the properties provided to the leather when applied four different stages of the process namely rechroming(before and after chromium) retanning-dyeing and fatliquoring. (2) Comparative study of the AFF agent versus three types of the most frequently used retanning agents. (3) Optimization of the mixture of four types of retanning agents, depending on the different articles to be made. This work corresponds to the first part, where different properties such as softness, thickness, color intensity, color levelness, grain fineness, physical resistances and grain firmness, are assessed on lambskin and cattle hide. The product was most effective at rechroming after chrome salt addition and dyeing, then at rechroming before chrome salt addition, then after fatliquoring.

49.14828

Effect of the fatliquoring on leather comfort-Part 1 : softness and compressibility of leather. MANICH (AM), BARENYS (J), MARTINEZ (L), (Instituto de Quimica Avanzada de Cataluna IQAC-CSIC, No. : 18 26 Calle Jordi Girona 03034 Barcelona/Trumpler, Spain). (Aqeic Bol. Tecn.; 65, 4; 2014, Oct./Nov./Dec.; 119). (Spanish).

Aims a study on the influence of different fatliquoring agents and that of the finishing process on the softness and compressibility of leather measured by the application of the standardized methods.

49.14829

Effects of fibre status on hot-wet comfort of sheep garment leather. WANG (L), FAN (X), SUN (Y), SUN (X), (College of Textiles and Clothing, Jiangnan University, Lihu Campus, No. : 1800 Lihu Avenue, Wuxi 214122 and Jiangsu School of Chemistry and Pharmaceutical Engineering, Qilu University of Technology, Daxue Road, Western University, Science Park, Jinan Shandong, Jinan 250353, China). (J. Soc. Leather Technol. Chem.; 98, 3; 2014, May-Jun.; 113-20).

Describes the hot-wet comfort, which is very important for clothing, that could be measured by several indicators such as air permeability, moisture permeability, water-absorption and heat retention. Analyzed first the photomicrographs of collagen fiber and that of pores in the finish film. Studied the hot-wet comfortable condition of sheep garment leather by measuring the main indicators listed above and by comparing thee indicators of sheep garment leather with those of other materials such as artificial materials and acrylic/cotton fibres. The results showed the air permeability, moisture permeability, water-absorbing quality of sheep garment leather were much better than acrylic/cotton materials and the heat retanning property of sheep garment leather, Nubuck had the highest porosity and the best hot-wet comfort; while patent sheep garment leather had the lowest porosity and the

worst hot-wet comfort in terms of sheep garment leather. Thus porosity and pore status important factors that affected the hot-wet comfort of leather clothes. (17 Ref.; 2 Tab.; 13 Fig.).

49.14830

Glutaraldehyde retannage-A review and assessment of the properties. TYAGI (PK), CHATTOPADHYAY (PK), MUKHERJEE (G), (Government College of Engineering and Leather Technology, LB Block, Eastern Metropolitan Bypass, Sector-III, Salt Lake, Kolkata-700 098, India). (J. Soc. Leather Technol. Chem.; 98, 3; 2014, May-Jun.; 99-107).

Describes two different samples of cow softy leather(identified as CSG_0 and CSG_3) that were prepared from a cow wet-blue of Indian origin. CSG_0 was the control sample and CSG_3 had 3% glutaraldehyde added to the process. Other unit operations like physical and chemical were the same in both samples. Studied the thermal, mechanical and hydrodynamic swelling behavior of these samples in order to correlate it with the cross-linking densities of the samples and also the hydrodynamic swelling behavior in three different solvents like water, toluene and xylene, by assuming definite solvent-bovine collagen parameters, cross-link densities were evaluated by applying the Flory-Rehner equation. Some distinguish theoretical models, as e.g. Money-Rivlin, Flory and Martin Roth & Stiehler(MRS) were tried for fit with the results obtained in stress-strain analyses with regard to the mechanical behavior. Derived a few constants for Cr-tanned cow leather, the value of constant A in MRS equation remained in the range of 0.9-1.0 and constant B in Flory's equation remained in the range of 0.001-0.005, not reported earlier. It was found that glutaraldehyde raised cross-linking density of chrome-tanned leather from $2.59x10^{-3}$ $mol.m^3$, which is reflected in the CSG_3 greater thermal resistance, but the physical degree of cross links, calculated from Flory-Rehner equation, decrease which is reflected in CSG_3 poor solvent resistance in comparison to CSG_0. (33 Ref.; 7 Tab.; 10 Fig.).

49.14831

Evaluation of drape on apparel leather : Structure-property relationship. KRISHNARAJ (K), THANIKAIVELAN (P), SATHIAMOORTHY (G), CHANDRASEKARAN (B), (Center for Leather Apparel & Accessories Development(CLAAD), Council of Scientific and Industrial Research-Central Leather Research Institute(CSIR-CLRI), Adyar, Chennai-600 020, India). (Leather Age; 36, 5; 2014, Apr.; 20 & 25-32).

Drape parameters namely drape efficient and number of modes were measured for sheep nappa, cow nappa & goat suede leathers meant for apparel applications. Even though grain side and flesh side of the nappa leather differs in their micro structure, the drape coefficient values of grain side up samples and flesh side up samples showed a very good correlation for both sheep(R=0.99) and cow(R=0.85) nappa leathers. It is concluded that the measurement of drape parameters using meter and calculation using Cusick method is suitable for apparel leathers, based on the obtained results. Also, it can be determined that the sampling position does not vary the drape coefficient value significantly for leathers with uniform substance and thickness. One of the key findings is that the weight of the cow nappa leather correlates inversely with drape coefficient(R=0.80) in contrast to sheep nappa leather-The other important finding is that the goat suede leathers possess significantly better drape ability

compared to sheep nappa and cow nappa leathers used for apparel application. This would facilitate in the selection of leathers for apparel requiring more fall, flexibility and textile clothing. Further, the values obtained would form as a benchmark for further studies on drape behavior of apparel leathers. (21 Ref.; 6 Tab.; 18 Fig.).

49.14832

VOC-free leathers : A moving target. KLEBAN (M), (M/s. LANXESS AG, Headquarters, Kennedyplatz 1, 50569 Cologne, Germany). (World Leather; 27, 3; 2014, Jun./Jul.; 21-2 & 24-5). Emissions of volatile organic compounds(VOCs) from leather originated as a discussion in the automotive industry, triggered by so-called "Fogging", a physical effect. Nowadays the focus is increasingly on smell and toxicological aspects of VOC emissions. This calls for new tests and bringing substances into the spotlight that have not been considered before. Overviews briefly about the current testing of emissions from leather and especially new challenges associated with acetaldehyde and propylene glycol ether-fogging problems once considered to be solved that have surfaced again. (4 Tab.; 4 Fig.; 1 Photo).

BY-PRODUCTS

49.14833

From a problem of solid waste to an useful product in beamhouse process. BETINA (G), LAURA (GM), CECILIA (G), ALFONSINA (B), ROQUE (H), CARLOS (C), (Citec-CIC PBA, Camino Centenario e505 y 508(1897) Manuel B Gonnet, Argentina). (Aqeic Bol. Tecn.; 65, 2; 2014, Apr./May/Jun.; 49-55). (Spanish).

Almost 10% of the weight of salted bovine skin becomes hair waste in hair-saving unhairing process. A strain of fungus *Trichophyton ajelloi* was isolated in samples from local soil using '*Vanbreuseghem'*s hair baiting technique'. This strain was capable of growing in a liquid mineral medium, added with 10 g/l of glucose and 5mM of thioglycolic acid, using hair waste as only source of N(nitrogen) and C(carbon). Discussed the possibility of obtaining a crude extract of maximum performance in proteolytic activity, specially keratinolytic, ammonium and SH generation after optimizing different variables of culture. Observed the changes at histological and hair release by optical microscopy when it was applied in beamhouse process in optimal conditions to reaction, along with commercial tensioactivities and biocide(soaking, unhairing and bating process) at laboratory process. It is possible to suggest that this extract could be useful by-product in leather technology. (22 Ref.; 1 Fig.; 6 Photos).

49.14834

Raw skin wastes-Used to prepare collagen fiber adsorbent for the chromatographic separation of flavonoids. ZHANG (Q), LI (X), LI (J), ZHANG (W), LIAO (X), SHI (B), (The Key Laboratory of Leather Chemistry and Engineering of Ministry of Education, Sichuan University, No. : 29 Jiuyanqiao Wangjiang Road, Chengdu 610064, China and National Engineering Laboratory for Clean

Technology of Leather Manufacture, Sichuan University, Wangjiang Campus, Section No. : 24 of Southern Yichuan, Chengdu 610065, Sichuan Province, People's Republic of China). (J. Soc. Leather Technol. Chem.; 98, 3; 2014, May-Jun; 93-8).

Describes a novel column packing material called the collagen fiber adsorbent(CFA) that had been prepared by using skin wastes as raw material for exploring the new approach of value-added utilization of tannery skin wastes. Investigated the separation application of CFA on flavonoids and its comparison with other current packing materials like silica gel, polyamide, D101 microporous resin and Sephadex LH-20. Rutin and kaempferol were selected as model flavonoids. Static adsorption indicated that the adsorption capacity of CFA to rutin and kaempferol was different and the extent of adsorption of kaempferol was lower because it has fewer hydroxyl groups/hydrogen-bond reaction sites. The mixture of rutin and kaempferol could be well separated by stepwise elution with 90% and 50% aqueous ethanol solutions and their recoveries were 90.02% and 94.60%, respectively in CFA column chromatography separation. However, rutin and kaempferol could not well separated and recovered by using silica gel, polyamide and D101 microporous resin columns in comparison with CFA. In addition, the cost of CFA is much lower, especially compared with Sephadex LH-20. Therefore, CFA has the potential to be applied as a packing material for separation of flavonoids. (16 Ref.; 1 Tab.; 14 Fig.).

49.14835

Leather retanning with protein based products. COOPER (M), BORDIGNON (S), GUTTERRES (M), (Chemical Engineering Department, Federal University of Rio Grande do Sul, No. : 221 Av. Osvaldo, Aranha, No. : 113-Bom Fim, Porto Alegre-RS, 90035-191, Brazil). (Aqeic Bol. Tecn.; 65, 2; 2014, Apr./May/Jun.; 71). (Spanish).

The retanning step provides leather with uniform characteristics as to filling, firmness, softness, physical-mechanical resistance as well some characteristics in the grain layer. Aims for the verification of the use of commercial protein based products as retanning agents. Discusses the post tanning that was applied on samples of bovine wet-blue hides and the protein based products with were compared with other retanning agents such as synthetic and vegetable tannins in the experiments. The influencial variables analyzed were concentration of the retanning agent, *p*H of the process and temperature. The response variables were thickness, softness, filling and physical-mechanical resistance. The hydrolyzed proteins showed smaller gains in thickness than the other retanning agents used. The results for progressive tanning of hydrolyzed collagen protein showed hides with greater strength and reduced elongation at break compared to hides without retanning and other products tested. In contrast, elasticity resulting from the powder hydrolyzed. Keratin was similar to that of the other retanning agents used. Regarding softness, the hydrolyzed protein from collagen resulted in softer hides compared to the hydrolyzed keratin and the blank test without retanning. Therefore the results obtained here show that it is possible to invest in technologies for recovery of protein from keratin and collagen-based by-products of the leather industry. These hydrolyzed proteins can return to the process as new inputs in order to improve materials management, thus reducing

the environmental impact and increasing the efficiency of the leather industry in the search for sustainability.

49.14836

Alternative fungicides for the leather industry, DIMPTS and IPBC. CUADROS (S), FONT (J), MANRESA (MA), (Departamento de Tecnologia Quimica y Tensioactivos, IQAC, No. : 18-26, Calle Jordi Girona 18-26, 08034 Barcelona, Spain). (Aqeic Bol. Tecn.; 65, 3; 2014, Jul./Aug./Sep.; 79).(Spanish).

Leather industry has a continuous need to adapt their processes to alternative technologies with less environmental legislation becoming stricter, leading to the search for new fungicides systems that comply with that law. The fungicide capacity of two alternative compounds, diiodometil p-totylsulfonet(DIMPTS), 3-iodo-2-propynyl butylcarbamate(IPBC) was compared to 2-(thiocianometilthio)-1,3-benzothiazole TCMPC, one of the conventional fungicides in tannery. Evaluated this fungicidal capacity against different strains of fungi in different processes. Different amounts of fungicides were applied in the chrome tanning process and a fatliquoring process of hides tanned with vegetable extracts. Further studies consisted in a microbiological control samples inoculated with fungi common in tannery, determination of the fungicide content on the hides, total and stratigraphic and a toxicity study of process wastewater. The effectiveness of DIMPTS and IPBC, verified in previous works, is confirmed when different amounts of fungicide are applied. Consequently, the amount of each fungicide against different strains of fungi can be optimized. The stratigraphic distribution in different strains of leather(wet-blue and vegetable) is also different. The toxicity of wastewater was lower in the case of the alternative fungicides with respect to TCMPC.

49.14837

Nutrient balance in aerobic biological treatment of tannery wastewater. ZHOU (J), WANG (Y), ZHANG (W), SHI (B), (The Key Laboratory of Leather Chemistry and Engineering of Ministry of Education, Sichuan University, No. : 29 Jiuyanqiao Wangjiang Road, Chengdu 610064 and National Engineering Laboratory for Clean Technology of Leather Manufacture, Sichuan University, Wangjiang Campus, Section No. : 24 of Southern Yichuan, Chengdu 610065, Sichuan Province, People's Republic of China). (J. Am. Leather Chem. Assoc.; 109, 5; 2014, May; 154-60).

Investigated the effect of nutrient composition of tannery wastewater on aerobic biological treatment, particularly on the removal of ammonia nitrogen(NH_3-N) and total nitrogen(TN) based on the theory of nutrient balance. Total organic carbon(TOC) and total phosphorus(TP) were almost exhausted during the biological treatment of conventional tannery wastewater. However, the removal of TN was unsatisfactory, suggesting that tannery wastewater contains excessive N source and insufficient C and P sources. The removals of NH_3-N and TN increased significantly when extra C and P sources were added together into the wastewater. The removals of NH_3-N and TN were 100% and 80% respectively and the added C and P sources

were almost consumed by activated sludge under the optimal ratio of TOC:TN:TP(10:1:0.2). This means that a good nutrient balance was achieved in this connection.Accordingly, it is reasonable to assume that the change of wastewater composition would favor the aerobic biological treatment of wastewater when ammonium salts are replaced by organic acids and phosphates in the deliming and bating processes. (19 Ref.; 4 Tab.; 11 Fig.).

49.14838

Trnsportation of chrome tanning in leather making. WU (C), ZHANG (W), LIAO (X), ZENG (Y), SHI (B), (Key Laboratory of Leather Chemistry and Engineering of Ministry of Education, Sichuan University, No. : 29 Jiuyanqiao Wangjiang Road, Chengdu 610064, People's Republic of China). (J. Am. Leather Chem. Assoc.; 109, 6; 2014, Jun.; 176-83).

Investigated an inverse chrome tanning technology based on wet white to avoid the release of chrome from leather into post tanning effluents and the generation of chrome shavings. Conventional bated pelt was first tanned using an amphoteric organic tanning agent(Tingjiang white tanning agent, TWT) without pickling. Then, the TWT tanned wet white was directly processed without conventional post tanning processes. Chrome tanning was transposed to the end of the post tanning. The wet white had a shrinking temperature(Ts) around 85°Centigrade that met the needs of shaving operation and did not generate chrome shavings. The Ts and Cr_2O_3(Chromium(**III**) oxide) content of the leather, by using this inverse chrome tanning technology, were higher than those of the conventional chrome tanned leather. The chrome output was reduced by 48% with this inverse technology, mainly because no chrome was released from leather in post tanning processes. Meanwhile, the volume of chromium-containing wastewater discharged from the inverse processes was 31% of that from the conventional processes, which makes it much easier to collect and recover chromium from the effluents. Additionally, the tensile strength, tear strength and general appearances of the leather produced by the inverse technology were comparable to those of the conventional chrome tanned leather. (17 Ref.; 7 Tab.; 9 Fig.).

49.14839

Production of bio-polymers from leather shavings-re-use as retanning agents. ESCABROS (J), MARTINEZ (L), BARENYS (J), (Trumpler Española S.A., Carrer Llobateres 15, Barbera del Vallès, Barcelona, Spain). (Aqeic Bol. Tecn.; 65, 1; 2014, Jan./Feb./Mar.; 11-8). (Spanish).

Describes none of the universal systems that has still been developed with the same performance and wide spectrum of applications despite all tremendous efforts done until today in order to develop an organic tanning process able to meet the same standards as the chrome tanning and W-B production. Focused on the efforts in order to reduce the environmental impact of the tanning procedure by assuming that the chrome tanning and W-B production will still be in use over the next years and bearing in mind that chrome shavings and other solid chrome containing wastes represent one of the major problems for disposal

recycling. Presents an innovative process designed to reprocess and re-use shavings(from wet-blue or wet-white) in the production of a wood range of green chemicals with low carbon foot print for the retanning of leather.

49.14840

Used oil re-refining : Creating wealth from waste. YADAV (SD), (M/s. Lubster Petro-Chem Industries, Plot No. : C-29, Maharashtra Industrial Development Corporation-Mahad, No. : K-4/4. Additional MIDC(Maharashtra State Industrial Development Corporation), Village Birwadi, Mahad-403 201, Raigad District, Maharashtra State, India). (Chem. Wkly.; 59, 45; 2014, Jun., 17; 185-6).

Very small but important part of tribology namely marketing of used re-refining oil(RRO) which not only emphasizes economics, but only environmental protection is concerned. (1 Photo).

WOOL TECHNOLOGY

49.14841

New generation emulsifiers for the leather industry. SENTURK (FN), SARAC (H), CANDAR (AV), REETZ (D), (Galze/Kocaeli, Turkiye, PucraChemicals GmbH, Isardamm 79-83, D-82538 Geretsried, Germany). (Aqeic Bol. Tecn.; 65, 1; 2014, Jan./Feb./Mar.; 34-43). (Spanish).
Emulsifiers of different chemical structures are used in many processes of leather making. Aims for the presentation of the authors' findings on the use of amine oxide based surfactants in various stages of leather manufacturing, like in soaking, degreasing and wool washing. Amine oxide based emulsifiers can be applied over a high *p*H range, including at cationic conditions. They are free of sulfur compounds, alkoxylates or fatty alcohols and can be used alone or in combination with other kind of emulsifiers. They are important advantages, what can especially be explained in terms of biodegradability and excellent general efficiency from the point of view of sustainability also. (9 Ref.; 6 Tab.; 3 Fig.).

TANNERY. ENVIRONMENTAL ASPECTS

49.14842

What sort of 'detox list' for the tanning industry? A contribution to identify, quantify and map the chemicals related to the tanning industry. PONCET (TB), (Sustainable Development Department, CTC(Center for Transboundary Cooperation), Puiestee 71A, 51009 Tartu, Estonia, Russia). (Aqeic Bol. Tecn.; 65, 3; 2014; Jul./Aug./Sep.; 101). (Spanish).

This work is a contribution to identify, quantify and map the chemicals used in the tanning industry. Identified a list of 29 substances detected in more than 10% of 43 tanneries. Decided to quantify the chemical with more accuracy from this list. Five substances were quantified over

environmental limits and among these five only one is considered a potential hazard namely tetrachloroethylene.

49.14843

Population biology of the Unionid Bivalve *Parreysia corrugate*(Muller, 1774) from the River Nethravathi, The Western Ghats, India. RAMESHA (MM), SOPHIA (S), (Environment Group, Central Institute of Brackishwater Aquaculture(CIBA), Indian Council of Aquatics Research (ICAR), No. : 75, Santhome High Road, Raja Annamalaipuram, Chennai-600 028, India). (Scitech J.; 1, 5; 2014, May; 15-21).

The unionid bivalve *Parreysia corrugate*(Muller 1774) is one of the common species in Indian freshwater bodies. Studied the population biology of freshwater bivalve *Parreysia corrugate* from the River Kempuhole between April 2005 and May 2006. Collected a total of 3,339 individuals ranging from 13 to 53.7 mm size on monthly intervals and subjected to analysis using FiSAT(Federal Institute of Science and Technology). The density and biomass of the $^{-2}$ and 16 and 531 g m^{-2}, respectively. Estimated the values of von Bertalanffy growth parameters(L=56.7, K=0.62, t_0=0.0304) and fitted the growth curve. The maximum length recorded(Lmax) was 53.6 mm. The total mortality was 2.46 year-1. The natural mortality and fishing mortality rates were 1.08 and 1.39 year-1 respectively. Hence, the life span of Parreysia corrugate about 4-5 years(58 months). The sizes attained by *Parreysia corrugate* were 18, 30, 45 and 50 mm in the first, second, third and fourth year respectively. The calculated average growth the rate of *Parreysia corrugate* for the first year was 2.06 mm/month, second year 1.14 mm/month, third year 0.61 mm/month, fourth year 0.33 mm/month and fifth year 0.18 mm/month. The recruitment pattern of *Parreysia corrugate* was continuous throughout the year and the only major peak observed was during July-September. The significant data that is essential for imaging widely distributed but less known freshwater bivalves from the rivers of India. (40 Ref.; 1 Tab.; 9 Fig.).

49.14844

Chromium and the leather research. TEGTMEYER (D), KLEBAN (M), (IULTCS(International Union of Leather Technologists and Chemists Societies), IULTCS Secretariat, c/o VESLIC Postfach 505 CH-4016 Basel, Switzerland). (Aqeic Bol. Tecn.; 65, 1; 2014, Jan./Feb./Mar.; 1-10). (Spanish).

It is argued that no reason can be found that any consumer should face a toxicity risk from Cr(**VI**) when simple guidelines are recommended that have been mentioned here on the basis of the current scientific knowledge. Advanced view of concerns, risks and results of scientific studies are taken and put in relation to the potential risks for an application of chrome tanned leather. It is important not to belittle or even hide risks or dangers. However if a risk is manageable then it should be ensured that all are correctly and accurately informed so that no false hysteria is generated. It is stressed that the focus should be made on the implementation of procedures even further reduce any theoretical risk. (7 Tab.).

49.14845

Waste not, want not. HUDSON (A), JIANG (J), (Leather Int'l; 286, 4843; 2014, Aug.; 26).

Concerns the pollution by light industries in China-specifically by the leather sector. Statistics are given that, amongst others, point out that processing 1 ton of hide produces between 20 to 80 m^3 of hazardous wastewater containing chromium, sulphide and nitrogen-plus the associated solid waste. The Ministry of Environmental Protection issued GB 30486-2013-discharge standards for the leather and fur industries. These new strict regulations establish specific demands for multiple parameters whereas the previous regulations only concerned themselves with biological oxygen demand(BOD) and chemical oxygen demand(COD) levels. The efforts concern process improvements as well as after-treatments and the aim is to cut emissions by about 10 to 14% per year. Comments on the various factors with tabulated data on regulations are also included.

49.14846

A novel approach to clean tanning technology. ZHANG (J), LI (J), SHI (B), YAN (L), LI (B), (Sichuan Tingjiang New Material Incorporation, Halwei Road, Guangzhu Road, Ronggui Town, Foshan, 52835 Guangdong Province, China). (Aqeic Bol. Tecn.; 65, 1; 2014, Jan./Feb./Mar.; 19-28).(Spanish).

Traditional chrome tanning technology is still widely used at present. In this technology, chrome shavings as well as chrome contained effluent in tanning and retanning processes is a big issue in the industry. Wet-white tanning technology has been gaining in importance in recent years, but in general, the comprehensive performance of chrome-free tanned leather is not comparable with that of chrome-tanned leather. Here, chrome-free tanning and chrome-tanning are combined in a reversed procedure, which produces leather with chrome-tanned leather quality without chrome-tanned leather waste problems. In this procedure, a special chrome-free tanning agent TWT was used to tan delimed hides(no pickle) making wet-white with shrinking temperature at 80-85°Centigrade. Then, new method called reversed tanning further process the wet-white into chrome-tanned crust. In this reversed method, retanning, fatliquoring and coloring processes were carried out before chrome tanning. This technology eliminates chrome waste issue in tanning, shaving, post tanning processes. The chrome contained effluent is only concentrated in the last chrome tanning process. The leather made with this technology has complete conventional chrome-tanned leather quality. In this way, chrome leather quality without waste problems was achieved. So it is a new clean tanning technology. (17 Ref.; 7 Tab.; 14 Fig.).

49.14847

Reactor control and optimization : An industrial perspective. WAGHMARE (RS), (Department of Chemical Engineering, Thadomal Shahain Engineering College, PG Kher Marg, Bandra

West, Mumbai-400 050, India). (Chem. Wkly.; 59, 44; 2014, Jun., 10; 207-10).

Discussed three types of key factors in design and operation of chemical reactors and plants. These are mass balance related, heat balance related and engineering related. Explained the parameters like capacity factor and efficiency and phenomena like hot spots or cold spots, butterfly effects and chaos. Proposed the novel concepts of Atom Adder Machine(AAM) and On Line Efficiency Meter(OLEM). A ten point check list shall enable a chemical plant to review its technical agenda. (2 Photos).

49.14848

Impact of leather production on the footwear carbon footprint. SEGARRA (V), ROIG (M), MARTINEZ (MA), (Footwear Technological Institute(INESCOP), Poligono Industrial "Campo Alto", Aptdo. Correos 253 03600, Elda, Spain). (Aqeic Bol. Tecn.; 65, 4; 2014, Oct./Nov./Dec.; 130). (Spanish).

The green house effect is a natural phenomenon by which the green house gases(GHG), which are part of the atmosphere, retain some of the energy emitted by the earth causing a natural warming of the earth's surface without which life, as all know it, would not be possible. The industry is partly responsible for these GHG, thus contributing to global warming. The carbon footprint is an environmental indicator that is used to measure the total sets of GHG emissions to the atmosphere caused by a product, service or organization throughout its whole lifecycle. INESCOP is carrying out the European LIFE project 'Footwear Carbon footprint(Co_2 Shoe)' which aims to develop a tool for measuring the carbon footprint and to implement it in shoe factories within the European Union. It will come a possibility to quantify the carbon footprint associated with each shoe production process, including the leather tanning process and to identify the processes that generate the greatest environmental impact by using this tool in order to minimize them by implementing the most appropriate measures to reduce CO_2 emissions and hence, the carbon footprint. Hence, presents the most results obtained in the project so far.

49.14849

'Green initiatives taken up by Indian chlor-alkali industry. GILRA (BS), (M/s. Alkali Manufacturers Association of India(AMAI), Pankaj Chamber, 3rd Floor, Commercial Complex, Vikas Marg, Preet Vihar, New Delhi-110 092, India). (Chem. Wkly.; 59, 44; 2014, Jan., 10; 203-4).

The chlor-alkali industry has been proactive & completely converting about two years ago to energy efficient & environment-friendly membrane cells technology on its own, but also in adopting innovative measures on its own towards energy & water conservation and solid waste minimization, to comply with prevailing regulations of authorities. The overall result is that Indian chlor-alkali industry in the present days may be termed as a 'Green' industry with various initiatives which has been listed, are being adopted by most units. (1 Photo).

49.14850

Positive growth of LWG environment protocol. (Leather News India; 5, 6; 2014, Jan.; 42-3).

Discusses briefly about the growth, that has been so far made by the Leather Working Group(LWG) which has been initiated by the leather industry and has been considered by many as one of the most positive pro-active programs. The LWG has been made up of representative practices from different areas of the product supply chain including major brands, tanners, technical experts and other industry representatives, endeavours to promote improvement in the tanning industry by creating alignment on environmental priorities, bringing visibility to best practices and providing guidelines for continual improvement. Discusses briefly also about the Indian scenario of LWG. (1 Fig.).

LEATHER PRODUCTS

FOOTWEAR

49.14851

Comfort in footwear-Part 1. GANGULY (SN), (J. Indian Leather Technol. Assoc.; 64, 6; 2014, Jun.; 557-63).

Defines the term 'Comfort'. Discusses the details of the specific components and materials and their individual contributions to comfort and its perception in wear; thermo-physiological effects of comfort as well as the waterproof membrane. (3 Ref.; 3 Fig.).

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