

THE

Journal

OF THE AMERICAN
LEATHER CHEMISTS ASSOCIATION

March 2020

Vol. CXV, No.3

JALCA 115(3), 77-120, 2020



116th Annual Convention

to be held at the
Eaglewood Resort & Spa

1401 Nordic Road
Itasca, IL 60143

June 16-19, 2020

For more information go to:
[leatherchemists.org/
annual_convention.asp](http://leatherchemists.org/annual_convention.asp)

Contents

Design of Leather Footwear for Diabetics Containing Chlorhexidine Digluconate Microparticles	79
by Fatih Yalcin, Huseyin Ata Karavana, Seda Rencber, and Sinem Yaprak Karavana	
Chromium Leachability from Leather Waste and Eco-toxicity under Environmental Conditions	87
by Peng Liang-qiong, Long Wen-jun, Li Yue, Zhang Wen-hua and Shi Bi	
Antibacterial Activities of Lichen Derived Extracts against Different Bacillus Species from Soak Liquor Samples	96
By Didem Berber	
Comparison of the Sustainability of the Vegetable, Wet-White and Chromium Tanning Processes through the Life Cycle Analysis	105
by Anna Bacardit, Felip Combalia, Joaquim Font and Grau Baquero	
Lifelines	112
ALCA News	
Rowles Scholarship Application	115
Call for Papers	120

Distributed by



An imprint of the University of Cincinnati Press

ISSN: 0002-9726

Communications for Journal Publication

Manuscripts, Technical Notes and Trade News Releases should contact:

MR. STEVEN D. LANGE, Journal Editor, 1314 50th Street, Suite 103, Lubbock, TX 79412, USA
E-mail: jalcaeditor@gmail.com Mobile phone: (814) 414-5689

Contributors should consult the Journal Publication Policy at:
http://www.leatherchemists.org/journal_publication_policy.asp

A MORE
SUSTAINABLE
TANNERY

RETURN ON
ENVIRONMENT

RETURN ON
INVESTMENT

PUT LESS INTO THE ENVIRONMENT AND MORE ON THE BOTTOM LINE WITH BUCKMAN.

You may already look to Buckman to protect hides and safeguard quality. But we can also help you protect the environment and your profitability. Our leather solutions include eco-friendly chemistries and enzymatic technologies that work better, speed up processes, and save energy. So you can dramatically reduce your tannery's environmental footprint. It's *Leatherforward Thinking* from Buckman. Advancing leather. Enhancing production.

To learn more, contact your Buckman representative or visit buckman.com.

JOURNAL OF THE AMERICAN LEATHER CHEMISTS ASSOCIATION

*Proceedings, Reports, Notices, and News
of the*
AMERICAN LEATHER CHEMISTS ASSOCIATION

OFFICERS

MIKE BLEY, *President*
Eagle Ottawa – Lear
2930 Auburn Road
Rochester Hills, MI 48309

JOSEPH HOEFLER, *Vice-President*
The Dow Chemical Company
400 Arcola Rd.
Collegeville, PA 19426

COUNCILORS

Shawn Brown
Quaker Color
201 S. Hellertown Ave.
Quakertown, PA 18951

Steve Lange
Leather Research Laboratory
University of Cincinnati
5997 Center Hill Ave., Bldg. C
Cincinnati, OH 45224

John Rodden
Union Specialties, Inc.
3 Malcolm Hoyt Dr.
Newburyport, MA 01950

Jose Luis Gallegos
Elementis LTP
546 S. Water St.
Milwaukee, WI 53204

LeRoy Lehman
LANXESS Corporation
9501 Tallwood Dr.
Indian Trail, NC 28079

Marcelo Fraga de Sousa
Buckman North America
1256 N. McLean Blvd.
Memphis, TN 38108

EDITORIAL BOARD

Dr. Meral Birbir
Department of Biology
Marmara University
Istanbul, Turkey

Cietta Fambrough
Leather Research Laboratory
University of Cincinnati
Cincinnati, Ohio

Dr. Cheng-Kung Liu
Eastern Regional Research Center
U.S. Department of Agriculture
Wyndmoor, Pennsylvania

Andreas W. Rhein
Tyson Foods, Inc.
Dakota Dunes, South Dakota

Chris Black
Consultant
St. Joseph, Missouri

Mainul Haque
ALCA Education
Committee Chairman
Rochester Hills, Michigan

Dr. Rafea Naffa
New Zealand Leather & Shoe
Research Association Inc. (LASRA*)
Palmerston North, New Zealand

Dr. Majher Sarker
Eastern Regional
Research Center
U.S. Department of Agriculture
Wyndmoor, Pennsylvania

Dr. Eleanor M. Brown
Eastern Regional
Research Center
U.S. Department of Agriculture
Wyndmoor, Pennsylvania

Joseph Hoefler
Dow Chemical Company
Collegeville, Pennsylvania

Dr. Edwin H. Nungesser
Dow Chemical Company
Collegeville, Pennsylvania

Dr. Bi Shi
National Key Laboratories
Sichuan University
Chengdu, China

Kadir Donmez
Leather Research Laboratory
University of Cincinnati
Cincinnati, Ohio

Elton Hurlow
Buckman International
Memphis, Tennessee

Lucas Paddock
Chemtan Company, Inc.
Exeter, New Hampshire

Dr. Palanisamy Thanikaivelan
Central Leather
Research Institute
Chennai, India

Dr. Anton Ela'mma
Retired
Perkiomenville, Pennsylvania

Prasad V. Inaganti
Wickett and Craig of America
Curwensville, Pennsylvania

Dr. J. Raghava Rao
Central Leather
Research Institute
Chennai, India

Dr. Luis A. Zugno
Buckman International
Memphis, Tennessee

Xue-Pin Liao
National Engineering Laboratories
Sichuan University
Chengdu, China

PAST PRESIDENTS

G. A. KERR, W. H. TEAS, H. C. REED, J. H. YOCUM, F. H. SMALL, H. T. WILSON, J. H. RUSSELL, F. P. VEITCH, W. K. ALSOP, L. E. LEVI, C. R. OBERFELT, R. W. GRIFFITH, C. C. SMOOT, III, J. S. ROGERS, LLOYD BALDERSON, J. A. WILSON, R. W. FREY, G. D. MCLAUGHLIN, FRED O'FLAHERTY, A. C. ORTHMANN, H. B. MERRILL, V. J. MLEJNEK, J. H. HIGHBERGER, DEAN WILLIAMS, T. F. OBERLANDER, A. H. WINHEIM, R. M. KOPPENHOEFER, H. G. TURLEY, E. S. FLINN, E. B. THORSTENSEN, M. MAESER, R. G. HENRICH, R. STUBBINGS, D. MEO, JR., R. M. LOLLAR, B. A. GROTA, M. H. BATTLES, J. NAGHSKI, T. C. THORSTENSEN, J. J. TANCOS, W. E. DOOLEY, J. M. CONSTANTIN, L. K. BARBER, J. J. TANCOS, W. C. PRENTISS, S. H. FAIRHELLER, M. SIEGLER, F. H. RUTLAND, D.G. BAILEY, R. A. LAUNDER, B. D. MILLER, G. W. HANSON, D. G. MORRISON, R. F. WHITE, E. L. HURLOW, M. M. TAYLOR, J. F. LEVY, D. T. DIDATO, R. HAMMOND, D. G. MORRISON, W. N. MULLINIX, D. C. SHELLY, W. N. MARMER, S. S. YANEK, D. LEBLANC, C.G. KEYSER, A.W. RHEIN, S. GILBERG, S. LANGE, S. DRAYNA, D. PETERS

THE JOURNAL OF THE AMERICAN LEATHER CHEMISTS ASSOCIATION (USPS #019-334) is published monthly by The American Leather Chemists Association, 1314 50th Street, Suite 103, Lubbock, Texas 79412. Telephone (806)744-1798 Fax (806)744-1785. Single copy price: \$8.50 members, \$17.00 non-member. Subscriptions: \$185 for hard copy plus postage and handling of \$60 for domestic subscribers and \$70 for foreign subscribers; \$185 for ezine only; and \$205 for hard copy and ezine plus postage and handling of \$60 for domestic subscribers and \$70 for foreign subscribers.

Distributed by the Cincinnati Library Publishing Services (CLIPS), an imprint of the University of Cincinnati Press.

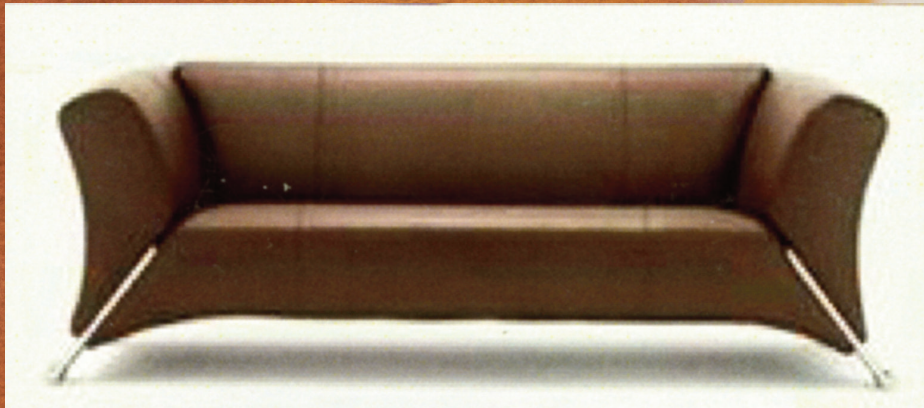
Periodical Postage paid at Lubbock, Texas and additional mailing offices. Postmaster send change of addresses to The American Leather Chemists Association, 1314 50th Street, Suite 103, Lubbock, Texas 79412.

LEATHER

AVELLISYNCO



Selected Dyestuffs



 **CHEMTAN**

17 Noble Farm Drive • Lee, NH 03861 (Office)
57 Hampton Road • Exeter, NH 03833 (Manufacturing)
Tel: (603) 772-3741 • Fax: (603) 772-0796
www.CHEMTAN.com

CALL FOR PAPERS

FOR THE 116th ANNUAL CONVENTION
OF THE AMERICAN LEATHER CHEMISTS ASSOCIATION

Eaglewood Resort & Spa, Itasca, Illinois

June 16-19, 2020

If you have recently completed or will shortly be completing research studies relevant to hide preservation, hide and leather defects, leather manufacturing technology, new product development, tannery equipment development, leather properties and specifications, tannery environmental management, or other related subjects, you are encouraged to present the results of this research at the next annual convention of the Association to be held at the Eaglewood Resort & Spa, Itasca, Illinois, June 16-19, 2020.

Abstracts are due by April 1, 2020

Full Presentations are due by June 1, 2020

They are to be submitted by e-mail to the
ALCA Vice-President and Chair of the Technical Program:

JOSEPH HOEFLER

The Dow Chemical Company

400 Arcola Rd.

Collegeville, PA 19426

E-mail: jhoefler@dow.com

The **ABSTRACT** should begin with the title in capital letters, followed by the authors' names. An asterisk should denote the name of the speaker, and contact information should be provided that includes an e-mail address. The abstract should be no longer than 300 English words, and in the Microsoft Word format.

FULL PRESENTATIONS at the convention will be limited to 25 minutes. In accordance with the Association Bylaws, all presentations are considered for publication by *The Journal of the American Leather Chemists Association*. They are not to be published elsewhere, other than in abstract form, without permission of the *Journal* Editor. For further paper preparation guidelines please refer to the *JALCA* Publication Policy on our website: leatherchemists.org

Full Presentations are to be submitted by e-mail to the *JALCA* editor:

STEVEN D. LANGE, *Journal* Editor

The American Leather Chemists Association

E-mail: jalcaeditor@gmail.com

Mobile Phone (814) 414-5689

Scholarship Application Available

Applications for the Randall Rowles Memorial Scholarship are now available through the ALCA office by either writing to ALCA, 1314 50th Street, Suite 103, Lubbock, TX 79412; or by emailing to carol.adcock@ttu.edu; or by calling (806) 744-1798.



Randall L. Rowles

Guidelines for the scholarship have been revised to broaden the requirements for the recipient. The recipient of the scholarship shall be a relative of an ALCA member in good standing or someone proposed by an ALCA member and pursuing a post-secondary education in the sciences. A current high school or college transcript must be submitted to the ALCA office along with an application.

The scholarship shall be based on merit. The GPA of the applicant will be a significant criterion for the selection committee.

Completed applications must be received at the ALCA office no later than May 1, 2020. The selection of the recipient will be made no later than June 1, 2020. Members of the Selection Committee will be Lori Hyllengren and Nick Latona, Co-Chairs, Mike Bley, Okey Abara and Cheng-Kung Liu.

The amount of the scholarship is \$500, and the recipient will be announced at the Annual Business Meeting of the Association on Thursday, June 18, 2020, at Eaglewood Resort & Spa, Itasca IL.

THE AMERICAN LEATHER CHEMISTS ASSOCIATION

1314 50th Street, Suite 103, Lubbock, Texas 79412-2940

Ph: 806-744-1798

Fax: 806-744-1785

Web: www.leatherchemists.org

Email: carol.adcock@ttu.edu

QUALITY LASTS.



Enduring results are created stitch by stitch. To achieve them, we provide leather manufacturers worldwide with products and know-how on future fashion trends. Furthermore, we pay particular attention to the best options available in terms of sustainability. Our products provide better results through superior durability. They also minimize the use of critical resources and help meet regulatory objectives. Our “Sustainable Leather Management” initiative enables us to meet responsibilities that go far beyond the supply of quality products. LANXESS quality meets the trends of tomorrow, sustainability. leather.lanxess.com



QUALITY WORKS.

LANXESS
Energizing Chemistry

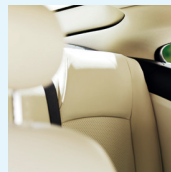


Stahl's innovations driven by sustainability

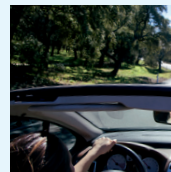
With the rise of both electric and self-driving, cars are becoming quieter and anti-squeak and rattle materials are becoming increasingly important. At the same time, improved anti-stain performance is required, because of the current trend for pale-colored car seats. Therefore, we have developed Stay Clean. This low-VOC coating technology protects pale-colored leather and vinyl surfaces against common stains, such as dye from jeans, spilled coffee and dirt. Our solution also makes surfaces low-squeak, which is a great asset as global research has shown that a squeaking car interior is one of the biggest annoyances among car owners. Another trend in car interior is the popularity of matt surfaces. Therefore, we have developed PolyMatte®. This non-squeaking solution provides a luxurious feel to the finished article in combination with flexibility and scratch and abrasion resistance. Our portfolio contains many products, varying from beamhouse products, tanning systems to finishes,

duller concentrates, crosslinkers and thickeners to leveling agents, defoamers, colorants and hand modifiers. Our most sustainable option is Green PolyMatte®, which is based on rapeseed oil (20%) instead of crude oil-derived intermediates. If you would like to know what our Stahl solutions for automotive can do for your business, please visit www.stahl.com or contact us at: alexander.campbell@us.stahl.com.

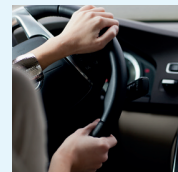
If it can be imagined, it can be created



Stay Clean



Low-VOC



PolyMatte®



C O L D M i l l i n g



Smooth Leather
Milling

Celebrating
75 Years
1941-2016

UNION
Specialties, Inc.

**The power of water-based
polyurethane technology**

3 Malcolm Hoyt Dr. Newburyport, MA 01950, USA. Certified ISO 9001:2015
Tel: +1 978-465-1717 Fax: +1 978 465-4194 E-mail: union@unionspecialtiesinc.com

www.unionspecialtiesinc.com



THE AMERICAN LEATHER CHEMISTS ASSOCIATION

1314 50th Street, Suite 103, Lubbock, Texas 79412-2940

Ph: 806-744-1798 Fax: 806-744-1785 Web: www.leatherchemists.org

Email: carol.adcock@ttu.edu

Past Issues of *Journal* Needed

If you or someone you know wants to donate past issues of the *Journal* to the Association, please contact us.

Below is a list of issues needed.

Missing Issues:

1906–1909; 1911; 1913; 1915; 1921

1937 – January and December

1939 – January, March and April

1940 – January

Extremely Low Supply:

1931 – February

1936 – January and February

1944 – Jan., Oct., Nov. and Dec.

1945 – June

1946 – January – April

1947 – January, April and August

1948 – January – March

1949 – January – June

1955 – January

1969 – March

1970 – February

1979 – July

1983 – March

1984 – July

1999 – June and July

2000 – January and February

2001 – May and June

2002 – January and March

INDEX TO ADVERTISERS

ALCA Annual Meeting	<i>Inside Back Cover</i>
ALCA Call for Papers	114
ALCA Information	120
Buckman Laboratories	<i>Inside Front Cover</i>
Chemtan	78
Chemtan	<i>Back Cover</i>
Erretre	116
LANXESS	114
Stahl	115
Union Specialties Inc.	117



**116th ALCA
ANNUAL CONVENTION
June 16-19, 2020
Eaglewood Resort & Spa
Itasca, IL**

**Featuring the 61st John Arthur Wilson Memorial Lecture
By Randy Johnson, President and CEO
of GST AutoLeather**

Tentative Schedule

Tuesday, June 16

Golf Tournament, Opening Reception and Dinner

Wednesday, June 17

***John Arthur Wilson Memorial Lecture
All Day Technical Sessions, Fun Run
Reception and Dinner, Activities - Bowling, Pool,
Darts and an Open Bar***

Thursday, June 18

***All Day Technical Sessions, Annual Business Meeting
Activities Awards Luncheon
Social Hour, ALCA Awards Banquet***

***Visit us at www.leatherchemists.org for full details
under Annual Convention as they become available***

www.CHEMTAN.com

Made with
**WATERPROOF
TECHNOLOGY**



Tel: (603) 772-3741 • Fax: (603) 772-0796 • www.CHEMTAN.com