July 2019

FLUORIDE

Quarterly Journal of The International Society for Fluoride Research Inc.

www.fluorideresearch.online

Owned & published by The International Society for Fluoride Research Incorporated © 2019. All rights reserved.

Editor-in-Chief:

Dr Bruce J Spittle. Dunedin, New Zealand. E-mail: spittle727@gmail.com and spittle@es.co.nz

Regional Editor for Africa:

Professor Eli Dahi. Denmark (previously Ngongongare, Tanzania). E-mail: elidahi@hotmail.com

Regional Editor for Eastern Europe:

Professor Dariusz Chlubek. Department of Biochemistry and Chemistry, Pomeranian Medical University, Szczecin, Poland. E-mail:dchlubek@sci.pum.edu.pl

Regional Editors for India, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, and Sri Lanka:
For papers on all aspects of fluoride: Dr Shanti Lal Choubisa. Emeritus Professor of Biotechnology, Department of Advanced Science & Technology, Nims University Rajasthan, Jaipur-303121, India. E-mail: choubisasl@yahoo.com For public health based papers: Professor Vikas K Desai. Community Medicine Department, Government Medical College (GMCS), Majura Gate, Surat, Gujarat, India – 395005. E-mail: psmvikas@hotmail.com

Regional Editor for Latin America, including Mexico, Central America, and Cuba:

Dr Alfredo Rigalli. Rosario, Argentina. E-mail: arigalli@unr.edu.ar and arigalli@conicet.gov.ar

Regional Editor for the Middle East:

Dr Amir Hossein Mahvi. Department of Environmental Health Engineering, School of Public Health and Institute for Environmental Research, Tehran University of Medical Sciences, Tehran, Iran. E-mail: ahmahvi@yahoo.com

Regional Editor for Pakistan and Afghanistan:

Dr Muhammad Nauman Ahmad. Department of Agricultural Chemistry, The University of Agriculture, Peshawar, Pakistan. E-mail: drnumanahmad@aup.edu.pk

Regional Editors for People's Republic of China:

Professor Zanhui Gao. Director of the Institute for Endemic Fluoride Control, Center for Endemic Disease Control, People's Republic of China CDC. E-mail: goayh411@163.com

Professor Zhi-Zhong Guan. Department of Pathology and Key Lab of Endemic and Ethnic Diseases (Guizhou Medical University), Ministry of Education, Guiyang Medical University, Guiyang, People's Republic of China. E-mail: zhizhongguan@yahoo.com

Associate Editors:

Professor Emeritus Hardy Limeback. University of Toronto, Toronto, ON, Canada.
Christopher Neurath. American Environmental Health Studies Project, Lexington, MA, USA.
Associate Professor Jashwanti D Sharma. Department of Zoology, University of Rajasthan, Jaipur, India.
Professor Dianjun Sun. Chinese Research Center for Endemic Disease Control, Harbin Medical University,

Harbin, People's Republic of China.

Professor Emeritus Andezhath K Susheela. Fluorosis Research & Rural Development Foundation, Delhi, India.

Prof. Masashi Tsunoda. Dept. of Preventive Medicine and Public Health, National Defense Medical College, Japan.

Professor Emeritus Ming-Ho Yu. Wester

Editorial Assistant:

Peter Meiers. Saarbrücken, Germany.

Fluoride is available as a free online open access journal at www.fluorideresearch.online and the articles can be accessed by clicking on the links below the titles in the online table of contents for the smallest file size, press quality, and Epub ahead of print (press quality) PDF versions.

EDITORIAL

193-198......PUBLISHING ON THE HARMFUL EFFECTS OF FLUORIDE EXPOSURE Bruce Spittle. Dunedin, New Zealand.

press quality PDF smallest file size PDF

Epub ahead of print (press quality) PDF

RESEARCH REPORTS

199–208...... COMPARISON OF THE EFFECTS OF SOIL TREATMENT WITH NAF AND KF ON ANTIOXIDANT ENZYMES IN WINTER WHEAT (*TRITICUM AESTIVUM* L.) SEEDLINGS Martyna Śnioszek, Arkadiusz Telesiński, Robert Biczak, Maciej Płatkowski, Barbara Pawłowska, Jacek Wróbel. Szczecin and Częstochowa, Poland.

smallest file size PDF press quality PDF Epub ahead of print (press quality) PDF

209–220...... THE INFLUENCE OF IMMUNOSUPPRESSIVE TREATMENT DURING PREGNANCY ON FLUORIDE LEVELS IN THE HARD TISSUES OF FEMALE WISTAR RATS AND THEIR **OFFSPRING**

Daniel Styburski, Marta Goschorska, Irena Baranowska-Bosiacka, Karolina Dec, Katarzyná Janda, Joanna Kabat-Koperska, Ewa Rebacz-Maron, Maciej Sikora, Izabela Gutowska, Dariusz Chlubek. Szczecin and Kielce, Poland.

Epub ahead of print (press quality) PDF smallest file size PDF press quality PDF

221-230...... EFFECTIVENESS OF NANOPARTICLE-BASED ACIDULATED PHOSPHATE FLUORIDE (APF) GEL ON SURFACE MICROHARDNESS OF HUMAN ENAMEL: AN IN VITRO STUDY

> Raghavan Anusha, Balasubramaniam Arthi, Pannerselvam Balashanmugam, Kiran Iyer, Parangimalai Diwakar Madan Kumar. Chennai, India

smallest file size PDF press quality PDF Epub ahead of print (press quality) PDI

ii

Table of contents Fluoride 52(3 Pt 1):i-ii July 2019

231-247.....REMOVAL OF FLUORIDE FROM DRINKING WATER BY FREEZING TECHNOLOGY Sara Sadat Hosseini, Amir Hossein Mahvi. Tehran, Iran.

smallest file size PDF press quality PDF Epub ahead of print (press quality) PDF

248–264..... DATABASE MANAGEMENT OF DEFLUORIDATION WORKS AS AN ESSENTIAL TOOL IN MINIMISING EXPOSURE TO FLUORIDE THROUGH WATER Eli Dahi. Defluoridation Technology Project, Tanzania/Denmark.

smallest file size PDF press quality PDF Epub ahead of print (press quality) PDF

265–272...... ASSESSMENT OF FLUORIDE DAMAGE TO WHEAT (*TRITICUM AESTIVUM*)
CULTIVATED NEAR BRICK KILNS IN THE RAWALPINDI DISTRICT, PAKISTAN Rabail Urooj, Sheikh Saeed Ahmad, Muhammad Nauman Ahmad. Rawalpindi, Pakistan.

press quality PDF Epub ahead of print (press quality) PDF

273-283..... ASSESSING THE EFFECT OF FOLIAR AND SOIL FLUORIDE STRESS ON TURNIP (BRASSICA RAPA L.)

Shakil Ahmed, Irma Saleemi, Fareeha Jabeen, Afia Zia, M Nauman Ahmad, Azeem Haider, Aftab Ahmad Khan, Syed S Alam Syed. Lahore, Pakistan.

press quality PDF Epub ahead of print (press quality) PDF

284-288...... THE LETHAL EFFECT OF GROUNDWATER FLUORIDE ON THE GERMINATION AND GROWTH OF MAIZE (ZEA MAYS) AND RICE (ORYZA SATIVA) SEEDS AND PLANTS Elvis Kichana, Solomon Minyila, Gerard Quarcoo. Tamale, Ghana.

smallest file size PDF press quality PDF

Epub ahead of print (press quality) PDF

A CHANGE IN THE ONLINE ADDRESS FOR FLUORIDE

Some difficulties have been experienced in recent months in the People's Republic of China in accessing Fluoride at www.fluorideresearch.org. To try to problem the website this has been www.fluorideresearch.online. The issues for the past few years on the website have been changed to the new address and over time the rest will also be changed. However, I am happy to make the change for any particular issue on request, Email: spittle727@gmail.com. The old address of www.fluorideresearch.org will continue to work outside of the People's Republic of China.

Bruce Spittle, Editor-in-Chief, Fluoride

THE RATES FOR FLUORIDE ISSN 0015-4725 IN HARD COPY FOR 2019 AND 2020

The rates for Fluoride ISSN 0015-4725 in hard copy for 2019 are unchanged from those for 2015–2018: US\$68, Canadian\$73, £40, Japan¥7,000, €50, Australian\$73, or New Zealand\$78. A NZ\$5 discount is available if it is posted to a NZ address, i.e. NZ\$73, as the postage is less. However, the cost of back issues has risen to US18 per issue of approximately 96 pages to reflect the increased costs of printing and postage.

The rates for Fluoride ISSN 0015-4725 in hard copy for 2020 have increased, because of increased printing and postal charges, compared to those for 2015-2019. The rates for 2020, using the exchange rates for US\$75 current on 3 March 2019 are: US\$75, Canadian\$100, £57, Japan¥8,000, €66, Australian\$106, or New Zealand\$110. A NZ\$5 discount is available if it is posted to a NZ address, i.e. NZ\$105, as the postage is less. The cost of back issues has also risen to US\$18 per issue of approximately 96 pages to reflect these increased costs.

The subscription charges may be paid in any of the above currencies.