

RADIOCHIMICA ACTA

INTERNATIONAL JOURNAL FOR CHEMICAL
ASPECTS OF NUCLEAR SCIENCE AND TECHNOLOGY

EDITOR-IN-CHIEF

S. M. Qaim, Jülich

EDITORS

T. E. Albrecht-Schmitt, Tallahassee

Z. Chai, Beijing

Ch. E. Düllmann, Mainz

S. S. Jurisson, Columbia

C. Le Naour, Orsay Cedex

P. K. Mohapatra, Mumbai

A. Shinohara, Osaka

ADVISORY BOARD

W. Cha, Daejeon

N. Dacheux, Montpellier

R. Eichler, Villigen

C. Ekberg, Gothenburg

N. D. M. Evans, Loughborough

M. Fassbender, Los Alamos

H. Geckeis, Karlsruhe

J. John, Prague

S. N. Kalmykov, Moscow

S. Lahiri, Kolkata

V. K. Manchanda, Suwon

G. Modolo, Jülich

Y. Nagame, Ibaraki

B. Neumaier, Jülich

F. Rösch, Mainz

Th. J. Ruth, Vancouver

X. Wang, Beijing

J. H. Zaidi, Islamabad

DE GRUYTER

ABSTRACTED/INDEXED IN Baidu Scholar · Cabells Journalytics · Chemical Abstracts Service (CAS): CAPplus; SciFinder · Chimica · CNKI Scholar (China National Knowledge Infrastructure) · CNPIEC: cnpLINKer · Dimensions · EBSCO (relevant databases) · EBSCO Discovery Service · Engineering Village · Genamics JournalSeek · Google Scholar · IBR (International Bibliography of Reviews of Scholarly Literature in the Humanities and Social Sciences) · IBZ (International Bibliography of Periodical Literature in the Humanities and Social Sciences) · Inspec · Japan Science and Technology Agency (JST) · J-Gate · Journal Citation Reports/Science Edition · JournalGuide · JournalTOCs · KESLI-NDSL (Korean National Discovery for Science Leaders) · Microsoft Academic · MyScienceWork · Naver Academic · Naviga (Softweco) · Primo Central (ExLibris) · Publons · QOAM (Quality Open Access Market) · ReadCube · Reaxys · SCImago (SJR) · SCOPUS · Semantic Scholar · Sherpa/RoMEO · Summon (ProQuest) · TDNet · Ulrich's Periodicals Directory/ulrichsweb · WanFang Data · Web of Science: Current Contents/Physical, Chemical and Earth Sciences; Science Citation Index; Science Citation Index Expanded · WorldCat (OCLC) · Yewno Discover

ISSN 0033-8230 · e-ISSN 2193-3405

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at <http://www.degruyter.com/ract>

EDITOR-IN-CHIEF Professor Dr. Dr. h. c. mult. S. M. Qaim, Forschungszentrum Jülich GmbH, Institut für Naturwissenschaften und Medizin, INM-5: Nuklearchemie, 52425 Jülich, Germany, e-mail: s.m.qaim@fz-juelich.de

EDITORS Professor Dr. T. E. Albrecht-Schmitt, Gregory R. Choppin Chair in Chemistry, Department of Chemistry and Biochemistry, Director, Center for Actinide Science & Technology, Florida State University, 95 Chieftan Way, Tallahassee, Florida 32306, USA, e-mail: albrecht-schmitt@chem.fsu.edu

Professor Dr. Z. Chai, Chinese Academy of Sciences, Institute of High Energy Physics, Laboratory of Nuclear Analysis, P.O. Box 918, 100039 Beijing, China, e-mail: chaizf@mail.ihep.ac.cn

Professor Dr. Ch. E. Düllmann, Johannes Gutenberg-Universität Mainz, Department Chemie - Standort TRIGA, Fritz-Strassmann-Weg 2, e-mail: duellman@uni-mainz.de

Professor Dr. S. S. Jurisson, University of Missouri, Chemistry Department, Columbia, MO 65211, USA, e-mail: jurissons@missouri.edu

Dr. C. Le Naour, IJCLAB, 15 rue Georges Clémenceau, 91405 Orsay cedex, France, e-mail: lenaour@ipno.in2p3.fr

Dr. Prasanta K. Mohapatra, Actinide Chemistry Section, Radiochemistry Division, Bhabha Atomic Research Centre, Mumbai-400085, India, e-mail: mpatra@barc.gov.in

Professor Dr. A. Shinohara, Osaka University, Graduate School of Science, Department of Chemistry, Machikaneyama-cho, Toyonaka, Osaka 560-0043, Japan, e-mail: shino@chem.sci.osaka-u.ac.jp

PUBLISHER Walter de Gruyter GmbH, Berlin/Boston, Genthiner Straße 13, 10785 Berlin, Germany

JOURNAL COORDINATOR Birgit Zoglmeier, De Gruyter, Rosenheimer Str. 143, 81671 München, Germany.

Tel.: +49 (0)89 769 02-426, Fax: +49 (0)89 769 02-491, e-mail: Birgit.Zoglmeier@degruyter.com

RESPONSIBLE FOR ADVERTISEMENTS Markus Kügel, De Gruyter, Rosenheimer Str. 143, 81671 München, Germany.

Tel.: +49 89 76 902-424, e-mail: anzeigen@degruyter.com

© 2022 Walter de Gruyter GmbH, Berlin/Boston, Germany

TYPESETTING TNQ Technologies, Chennai, India

DRUCK Franz X. Stickle Druck und Verlag e.K., Ettenheim



Offenlegung der Inhaber und Beteiligungsverhältnisse gem. § 7a Abs. 1 Ziff. 1, Abs. 2 Ziff. 3 des Berliner Pressegesetzes: Die Gesellschafter der Walter de Gruyter GmbH sind: Cram, Gisela, Rentnerin, Berlin; Cram, Elsbeth, Pensionärin, Rosengarten-Alvesen; Cram, Dr. Georg-Martin, Unternehmens-Systemberater, Stadtbergen; Cram, Maike, Wien (Österreich); Cram, Jens, Mannheim; Cram, Ingrid, Betriebsleiterin, Tuxpan/Michoacan (Mexiko); Cram, Sabina, Mexico, DF (Mexiko); Cram, Silke, Wissenschaftlerin, Mexico DF (Mexiko); Cram, Björn, Aachen; Cram, Berit, Hamm; Cram-Gomez, Susana, Mexico DF (Mexiko); Cram-Heydrich, Walter, Mexico DF (Mexiko); Cram-Heydrich, Kurt, Angestellter, Mexico DF (Mexiko); Duvenbeck, Brigitta, Oberstudienrätin i.R., Bad Homburg; Gädeke, Gudula, M.A., Atemtherapeutin/Lehrerin, Tübingen; Gädeke, Martin, Student, Ingolstadt; Gomez Cram, Arturo Walter, Global Key Account Manager, Bonn, Gomez Cram, Ingrid Arlene, Studentin, Mexico, DF (Mexiko), Gomez Cram, Robert, Assistant Professor, London UK, Lubasch, Dr. Annette, Ärztin, Berlin; Schütz, Dr. Christa, Ärztin, Mannheim; Schütz, Sonja, Diplom.-Betriebswirtin (FH), Berlin; Schütz, Julianne, Berlin; Schütz, Antje, Berlin; Schütz, Valentin, Mannheim; Seils, Dorothee, Apothekerin, Stuttgart; Seils, Gabriele, Journalistin, Berlin; Seils, Christoph, Journalist, Berlin; Siebert, John-Walter, Pfarrer, Oberstenfeld; Anh Vinh Alwin Tran, Student, Zürich (Schweiz), Tran, Renate, Mediatorin, Zürich (Schweiz); Carmen Siebert, Angestellte, Kempten; Duyen Anh Johann Tran, Architekt, Zürich (Schweiz); Lang Lieu Laurin Tran, Lehrperson, Zürich (Schweiz); Duyen Mai Marie Tran, Studentin, Zürich (Schweiz); Anh Huy Merlin Tran, Schüler, Zürich (Schweiz).

Contents

Original Papers

Md Shuza Uddin

Activation cross sections of some neutron-induced reactions in the energy range of 13.82–14.71 MeV — 1

Richard M. Essex, Lav Tandon, Amy Gaffney, Cole R. Hexel, Debbie A. Bostick, Lisa M. Colletti, Diana L. Decker, Casey C. Finstad, Joe M. Giaquinto, Elmer Lujan, John D. Partridge, Benjamin D. Roach, John Rolinson, Kyle Samperton, Alice K. Slemmons, Khalil J. Spencer, Floyd E. Stanley, Lisa E. Townsend, Kerri C. Treinen, Ross W. Williams, Christopher G. Worley and Ning Xu

New reference materials for trace-levels of actinide elements in plutonium — 9

Zhe Wang, Feng-Yu Huang, Yan Liu, Fa-Cheng Yi, Yuan Feng, Ying Luo, Wen-Jing Jia and Zhen-Yu Wang

Adsorption properties and mechanism of uranium by three biomass materials — 23

Amir Doram, Mohammad Outokesh, Seyed Javad Ahmadi and Fazel Zahakifar

Synthesis of “(aminomethyl)phosphonic acid-functionalized graphene oxide”, and comparison of its adsorption properties for thorium(IV) ion, with plain graphene oxide — 37

Review

Tianxing Da, Tao Chen, Yan Ma and Zhenfeng Tong

Application of response surface method in the separation of radioactive material: a review — 51

Original Paper

M. H. Sanad, Ayman B. Farag, F. A. Marzook and Sudip Kumar Mandal

Preparation, characterization, and bioevaluation of ^{99m}Tc -famotidine as a selective radiotracer for peptic ulcer disorder detection in mice — 67