University of Calgary

PRISM Repository **https://prism.ucalgary.ca**

The Vault Open Theses and Dissertations

2016

Developing Porous Water Stable Metal Phosphonates for CO2 Capture Applications

Mah, Roger K

Mah, R. K. (2016). Developing Porous Water Stable Metal Phosphonates for CO2 Capture Applications (Doctoral thesis, University of Calgary, Calgary, Canada). Retrieved from https://prism.ucalgary.ca. doi:10.11575/PRISM/25627

http://hdl.handle.net/11023/2877

Downloaded from PRISM Repository, University of Calgary

Home
Organization
Procedures
Working Groups / Task Force
Activities
Calendar
Meeting Documentation
News and Outreach
Publications and Data
Presentations and Speeches
IPCC Scholarship Programme
Links
Contact

COPYRIGHT

Unless otherwise stated, the information available on this website, including text, logos, graphics, maps, images and electronic downloads is the property of the IPCC and is protected by intellectual property laws.

You may freely download and copy the material contained on this website for your personal, non-commercial use, without any right to resell or redistribute it or to compile or create derivative works there from, subject to more specific restrictions that may apply to specific materials.

Reproduction of limited number of figures or short excerpts of IPCC material is authorized free of charge and without formal written permission provided that the original source is properly acknowledged, with mention of the complete name of the report, the publisher and the numbering of the page(s) or the figure(s). Permission can only be granted to use the material exactly as it is in the report. Please be aware that figures cannot be altered in any way, including the full legend. For media use it is sufficient to cite the source while using the original graphic or figure. In line with established Internet usage, any external website may provide a hyperlink to the IPCC website or to any of its pages without requesting permission.

For any other use, permission is required. To obtain permission, please address your request to the Secretary of the IPCC in a signed letter with all relevant details using official letterhead and fax it to: +41 22 730 8025. All communications by mail should be addressed to:

IPCC Secretariat
World Meteorological Organization
7bis Avenue de la Paix, P.O. Box No. 2300
CH-1211 Geneva 2,
Switzerland

All e-mail communications should be addressed to Ms. Sophie Schlingemann, Legal and Liaison Officer.

Home

Pure and Applied Chemistry

Pure and Applied Chemistry

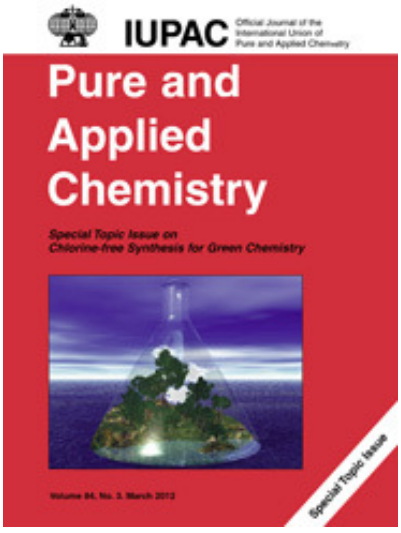
News

December Issue Available

December 11, 2013

Articles from 4th Analytical Chemistry Conference African Network of Analytical Chemists (SEANAC) and Technical Report

News archive →



ISSN printed 0033-4545
ISSN electronic 1365-3075

Effective **January 1, 2014** *Pure and Applied Chemistry* will be published by De Gruyter as part of a partnership with IUPAC, and the online version will be available on the publisher's website.

Since 1960, IUPAC has made available to chemists everywhere a large amount of important chemical information published in the journal *Pure and Applied Chemistry*.

Pure and Applied Chemistry is the official monthly Journal of IUPAC, with responsibility for publishing works arising from those international scientific events and projects that are sponsored and undertaken by the Union. The policy is to publish highly topical and credible works at the forefront of all aspects of pure and applied chemistry, and the attendant goal is to promote widespread acceptance of the Journal as an authoritative and indispensable holding in academic and institutional libraries.

The most recent **Impact Factor** for *Pure and Applied Chemistry* is **3.386** according to 2012 Journal Citation Reports released by Thomson Reuters (ISI) in 2013.

- **Archive**

- Journal objectives
- Publication policy
- Editorial board
- Manuscript Central

IUPAC makes freely available the full texts of all articles published in *Pure and Applied Chemistry* on the IUPAC Web site, for all except the current and most recently completed volumes. In addition, authors may immediately deposit copies of their own articles online, for archival and distribution purposes, but only in the form of the IUPAC published pdf version. IUPAC Technical Reports and Recommendations are freely accessible from date of publication.

Use of material such as figures and tables from articles published in *Pure and Applied Chemistry* is permitted so long as the source of the material is properly cited. If formal permission is required, please send a request to <pac@iupac.org>.

Dissemination of IUPAC Recommendations and Technical Reports is encouraged and there is no objection to:

- Republication or reproduction of any report or its storage and/or dissemination by electronic means. Furthermore, no formal IUPAC permission is needed on condition that an acknowledgment, with full reference to the source along with use of the copyright symbol ©, the name of IUPAC, and the year of publication, is prominently visible.
- Publication of a translation into another language is subject to the additional condition of prior approval from the relevant IUPAC National Adhering Organization, and requests should be addressed to the IUPAC Secretariat.

Top ↑ | Copyright © 2016 International Union of Pure and Applied Chemistry | Legal Notice / Imprint

Copyright Clearance Center RightsLink®

Home | Account Info | Help | Live Chat

Science AAAS

Title:	Systematic Design of Pore Size and Functionality in Isoreticular MOFs and Their Application in Methane Storage
Author:	Mohamed Eddaoudi, Jaheon Kim, Nathaniel Rosi, David Vodak, Joseph Wachter, Michael O'Keeffe, Omar M. Yaghi
Publication:	Science
Publisher:	The American Association for the Advancement of Science
Date:	Jan 18, 2002

Copyright © 2002, American Association for the Advancement of Science

Logged in as:
Roger Mah
Account #: 3000944143

LOGOUT

Order Completed

Thank you very much for your order.

This is a License Agreement between Roger K Mah ("You") and The American Association for the Advancement of Science ("The American Association for the Advancement of Science"). The license consists of your order details, the terms and conditions provided by The American Association for the Advancement of Science, and the payment terms and conditions.

Get the printable license.

License Number	3732451047506
License date	Oct 19, 2015
Licensed content publisher	The American Association for the Advancement of Science
Licensed content publication	Science
Licensed content title	Systematic Design of Pore Size and Functionality in Isoreticular MOFs and Their Application in Methane Storage
Licensed content author	Mohamed Eddaoudi, Jaheon Kim, Nathaniel Rosi, David Vodak, Joseph Wachter, Michael O'Keeffe, Omar M. Yaghi
Licensed content date	Jan 18, 2002
Volume number	295
Issue number	5554
Type of Use	Thesis / Dissertation
Requestor type	Scientist/individual at a research institution
Format	Print and electronic
Portion	Figure
Number of figures/tables	2
Order reference number	None
Title of your thesis / dissertation	Developing Porous Water Stable Metal Phosphonates for CO2 Capture Applications
Expected completion date	Dec 2015
Estimated size(pages)	250
Total	0.00 USD

ORDER MORE... CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com

Copyright Clearance Center RightsLink®

Home Account Info Help Live Chat

Title: Molecular transition-metal phosphonates

Author: Vadapalli Chandrasekhar,Tapas Senapati,Atanu Dey,Sakiat Hossain

Publication: Dalton Transactions

Publisher: Royal Society of Chemistry

Date: Mar 3, 2011

Copyright © 2011, Royal Society of Chemistry

Logged in as:
Roger Mah
Account #: 3000944143

LOGOUT

Order Completed

Thank you very much for your order.

This is a License Agreement between Roger K Mah ("You") and Royal Society of Chemistry. The license consists of your order details, the terms and conditions provided by Royal Society of Chemistry, and the payment terms and conditions.

Get the printable license.

License Number	3732451483505
License date	Oct 19, 2015
Licensed content publisher	Royal Society of Chemistry
Licensed content publication	Dalton Transactions
Licensed content title	Molecular transition-metal phosphonates
Licensed content author	Vadapalli Chandrasekhar,Tapas Senapati,Atanu Dey,Sakiat Hossain
Licensed content date	Mar 3, 2011
Volume number	40
Issue number	20
Type of Use	Thesis/Dissertation
Requestor type	academic/educational
Portion	figures/tables/images
Number of figures/tables/images	1
Distribution quantity	5
Format	print and electronic
Will you be translating?	no
Order reference number	None
Title of the thesis/dissertation	Developing Porous Water Stable Metal Phosphonates for CO2 Capture Applications
Expected completion date	Dec 2015
Estimated size	250
Total	0.00 USD

ORDER MORE... CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com

Copyright Clearance Center RightsLink®

Home | Account Info | Help | Live Chat

ACS Publications Most Trusted. Most Cited. Most Read.

Title: Capture of Carbon Dioxide from Air and Flue Gas in the Alkylamine-Appended Metal–Organic Framework mmen-Mg2(dobpdc)

Author: Thomas M. McDonald, Woo Ram Lee, Jarad A. Mason, et al

Publication: Journal of the American Chemical Society

Publisher: American Chemical Society

Date: Apr 1, 2012

Copyright © 2012, American Chemical Society

Logged in as:
Roger Mah
Account #:
3000944143

LOGOUT

PERMISSION/LICENSE IS GRANTED FOR YOUR ORDER AT NO CHARGE

This type of permission/license, instead of the standard Terms & Conditions, is sent to you because no fee is being charged for your order. Please note the following:

- Permission is granted for your request in both print and electronic formats, and translations.
- If figures and/or tables were requested, they may be adapted or used in part.
- Please print this page for your records and send a copy of it to your publisher/graduate school.
- Appropriate credit for the requested material should be given as follows: "Reprinted (adapted) with permission from (COMPLETE REFERENCE CITATION). Copyright (YEAR) American Chemical Society." Insert appropriate information in place of the capitalized words.
- One-time permission is granted only for the use specified in your request. No additional uses are granted (such as derivative works or other editions). For any other uses, please submit a new request.

If credit is given to another source for the material you requested, permission must be obtained from that source.

BACK CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com

Copyright Clearance Center RightsLink®

Home | Account Info | Help | Live Chat

ACS Publications Most Trusted. Most Cited. Most Read.

Title: Adsorption Sites and Binding Nature of CO2 in Prototypical Metal−Organic Frameworks: A Combined Neutron Diffraction and First-Principles Study

Author: Hui Wu, Jason M. Simmons, Gadipelli Srinivas, et al

Publication: Journal of Physical Chemistry Letters

Publisher: American Chemical Society

Date: Jul 1, 2010

Copyright © 2010, American Chemical Society

Logged in as:
Roger Mah
Account #:
3000944143

LOGOUT

PERMISSION/LICENSE IS GRANTED FOR YOUR ORDER AT NO CHARGE

This type of permission/license, instead of the standard Terms & Conditions, is sent to you because no fee is being charged for your order. Please note the following:

- Permission is granted for your request in both print and electronic formats, and translations.
- If figures and/or tables were requested, they may be adapted or used in part.
- Please print this page for your records and send a copy of it to your publisher/graduate school.
- Appropriate credit for the requested material should be given as follows: "Reprinted (adapted) with permission from (COMPLETE REFERENCE CITATION). Copyright (YEAR) American Chemical Society." Insert appropriate information in place of the capitalized words.
- One-time permission is granted only for the use specified in your request. No additional uses are granted (such as derivative works or other editions). For any other uses, please submit a new request.

If credit is given to another source for the material you requested, permission must be obtained from that source.

BACK CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com

Copyright Clearance Center RightsLink®

Home | Account Info | Help | Live Chat

ACS Publications Most Trusted. Most Cited. Most Read.

Title: Virtual High Throughput Screening Confirmed Experimentally: Porous Coordination Polymer Hydration

Author: John J. Low, Annabelle I. Benin, Paulina Jakubczak, et al

Publication: Journal of the American Chemical Society

Publisher: American Chemical Society

Date: Nov 1, 2009

Copyright © 2009, American Chemical Society

Logged in as:
Roger Mah
Account #:
3000944143

LOGOUT

PERMISSION/LICENSE IS GRANTED FOR YOUR ORDER AT NO CHARGE

This type of permission/license, instead of the standard Terms & Conditions, is sent to you because no fee is being charged for your order. Please note the following:

- Permission is granted for your request in both print and electronic formats, and translations.
- If figures and/or tables were requested, they may be adapted or used in part.
- Please print this page for your records and send a copy of it to your publisher/graduate school.
- Appropriate credit for the requested material should be given as follows: "Reprinted (adapted) with permission from (COMPLETE REFERENCE CITATION). Copyright (YEAR) American Chemical Society." Insert appropriate information in place of the capitalized words.
- One-time permission is granted only for the use specified in your request. No additional uses are granted (such as derivative works or other editions). For any other uses, please submit a new request.

If credit is given to another source for the material you requested, permission must be obtained from that source.

BACK CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com

Copyright Clearance Center RightsLink®

Home | Account Info | Help | Live Chat

ACS Publications Most Trusted. Most Cited. Most Read.

Title: Thermal Analysis and Heat Capacity Study of Metal–Organic Frameworks

Author: Bin Mu, Krista S. Walton

Publication: The Journal of Physical Chemistry C

Publisher: American Chemical Society

Date: Nov 1, 2011

Copyright © 2011, American Chemical Society

Logged in as:
Roger Mah
Account #:
3000944143

LOGOUT

PERMISSION/LICENSE IS GRANTED FOR YOUR ORDER AT NO CHARGE

This type of permission/license, instead of the standard Terms & Conditions, is sent to you because no fee is being charged for your order. Please note the following:

- Permission is granted for your request in both print and electronic formats, and translations.
- If figures and/or tables were requested, they may be adapted or used in part.
- Please print this page for your records and send a copy of it to your publisher/graduate school.
- Appropriate credit for the requested material should be given as follows: "Reprinted (adapted) with permission from (COMPLETE REFERENCE CITATION). Copyright (YEAR) American Chemical Society." Insert appropriate information in place of the capitalized words.
- One-time permission is granted only for the use specified in your request. No additional uses are granted (such as derivative works or other editions). For any other uses, please submit a new request.

If credit is given to another source for the material you requested, permission must be obtained from that source.

BACK CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com

Copyright Clearance Center RightsLink®

Home Account Info Help Live Chat

ACS Publications Most Trusted. Most Cited. Most Read.

Title: Organically Pillared Micro- and Mesoporous Materials

Author: Abraham Clearfield

Publication: Chemistry of Materials

Publisher: American Chemical Society

Date: Oct 1, 1998

Copyright © 1998, American Chemical Society

Logged in as:
Roger Mah

LOGOUT

PERMISSION/LICENSE IS GRANTED FOR YOUR ORDER AT NO CHARGE

This type of permission/license, instead of the standard Terms & Conditions, is sent to you because no fee is being charged for your order. Please note the following:

- Permission is granted for your request in both print and electronic formats, and translations.
- If figures and/or tables were requested, they may be adapted or used in part.
- Please print this page for your records and send a copy of it to your publisher/graduate school.
- Appropriate credit for the requested material should be given as follows: "Reprinted (adapted) with permission from (COMPLETE REFERENCE CITATION). Copyright (YEAR) American Chemical Society." Insert appropriate information in place of the capitalized words.
- One-time permission is granted only for the use specified in your request. No additional uses are granted (such as derivative works or other editions). For any other uses, please submit a new request.

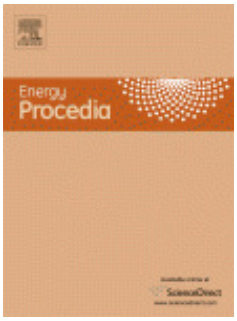
If credit is given to another source for the material you requested, permission must be obtained from that source.

BACK CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com

Copyright Clearance Center RightsLink®

Home | Account Info | Help | Live Chat



Title:	Post-Combustion CO2 Capture Using Solid Sorbents: 1 MWe Pilot Evaluation
Author:	Holly Krutka,Sharon Sjostrom,Travis Starns,Martin Dillon,Roy Silverman
Publication:	Energy Procedia
Publisher:	Elsevier
Date:	2013

Copyright © 2013 The Authors. Published by Elsevier Ltd.

Logged in as:
Roger Mah
Account #: 3000944143

LOGOUT

Order Completed

Thank you very much for your order.

This is a License Agreement between Roger K Mah ("You") and Elsevier ("Elsevier"). The license consists of your order details, the terms and conditions provided by Elsevier, and the payment terms and conditions.

Get the printable license.

License Number	3732460888261
License date	Oct 19, 2015
Licensed content publisher	Elsevier
Licensed content publication	Energy Procedia
Licensed content title	Post-Combustion CO2 Capture Using Solid Sorbents: 1 MWe Pilot Evaluation
Licensed content author	Holly Krutka,Sharon Sjostrom,Travis Starns,Martin Dillon,Roy Silverman
Licensed content date	2013
Licensed content volume number	37
Licensed content issue number	n/a
Number of pages	16
Type of Use	reuse in a thesis/dissertation
Portion	figures/tables/illustrations
Number of figures/tables/illustrations	1
Format	both print and electronic
Are you the author of this Elsevier article?	No
Will you be translating?	No
Original figure numbers	Figure 5
Title of your thesis/dissertation	Developing Porous Water Stable Metal Phosphonates for CO2 Capture Applications
Expected completion date	Dec 2015
Estimated size (number of pages)	250
Elsevier VAT number	GB 494 6272 12
Permissions price	0.00 USD
VAT/Local Sales Tax	0.00 USD / 0.00 GBP
Total	0.00 USD

ORDER MORE... CLOSE WINDOW

Copyright © 2015 Copyright Clearance Center, Inc. All Rights Reserved. Privacy statement. Terms and Conditions.
Comments? We would like to hear from you. E-mail us at customercare@copyright.com