

**Logic for Metal–Organic  
Framework Selection:  
MOFs for Biomedical Applications**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571

Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)



The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48n1984. | ISBN 9781713898764 (pod)

Copyright © 2024 American Chemical Society

All Rights Reserved. Reprographic copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Act is allowed for internal use only, provided that a per-chapter fee of \$40.25 plus \$0.75 per page is paid to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, USA. Republication or reproduction for sale of pages in this book is permitted only under license from ACS. Direct these and other permission requests to ACS Copyright Office, Publications Division, 1155 16th Street, N.W., Washington, DC 20036.

The citation of trade names and/or names of manufacturers in this publication is not to be construed as an endorsement or as approval by ACS of the commercial products or services referenced herein; nor should the mere reference herein to any drawing, specification, chemical process, or other data be regarded as a license or as a conveyance of any right or permission to the holder, reader, or any other person or corporation, to manufacture, reproduce, use, or sell any patented invention or copyrighted work that may in any way be related thereto. Registered names, trademarks, etc., used in this publication, even without specific indication thereof, are not to be considered unprotected by law.

PRINTED IN THE UNITED STATES OF AMERICA

# Contents

Preface .....	ix
1. Metal-Organic Frameworks (MOFs): An Introduction .....	1
Navid Rabiee	
2. Physicochemical and Mechanical Properties of Metal-Organic Frameworks .....	7
Fatah Ben Moussa	
3. Logic of Choosing Metal-Organic Frameworks .....	39
Hossein Daneshgar and Mojtaba Bagherzadeh	
4. Various Synthetic Strategies to Prepare Metal-Organic Frameworks .....	49
Yarabahally R Girish, Karthikeyarajan Vinothkumar, Siddappa A Patil, R. Geetha Balakrishna, and K. Pramoda	
5. Cytotoxicity and Biocompatibility of Metal-Organic Frameworks .....	69
Bahareh Farasati Far, Shaghayegh AdibAmini, and Ali Pourmolaei	
6. Antioxidant Activity of Metal-Organic Frameworks.....	107
Bahareh Farasati Far	
7. Antimicrobial Properties of Metal-Organic Frameworks.....	147
Bahareh Farasati Far	
8. Metal-Organic Frameworks in Dermal and Oral Wound Healing .....	181
Hamide Ehtesabi	
9. Metal-Organic Frameworks in Cardiac Regeneration .....	201
Bahareh Farasati Far, Alireza Tehranian, and Reza Nahavandi	
10. Metal-Organic Frameworks in Neural Regeneration.....	233
Bahareh Farasati Far, Reza Nahavandi, and Yasaman Mohammadi	
11. Metal-Organic Frameworks in Bone Regeneration .....	267
Mahsa Ghovvati, Keivan Bolouri, Naoki Kaneko, and Ehsan Nazarzadeh Zare	
12. Metal-Organic Frameworks in Biosensors .....	287
Hilmiye Deniz Ertuğrul Uygun and Zihni Onur Uygun	
13. Metal-Organic Frameworks in Gene Delivery .....	315
Faisal Raza, Hajra Zafar, Liangdi Jiang, Shulei Zhang, Jing Su, Wei-En Yuan, Qiu Mingfeng, and Ana Cláudia Paiva-Santos	

<b>Editors' Biographies .....</b>	<b>339</b>
-----------------------------------	------------

**Indexes**

<b>Author Index.....</b>	<b>343</b>
--------------------------	------------

<b>Subject Index.....</b>	<b>345</b>
---------------------------	------------