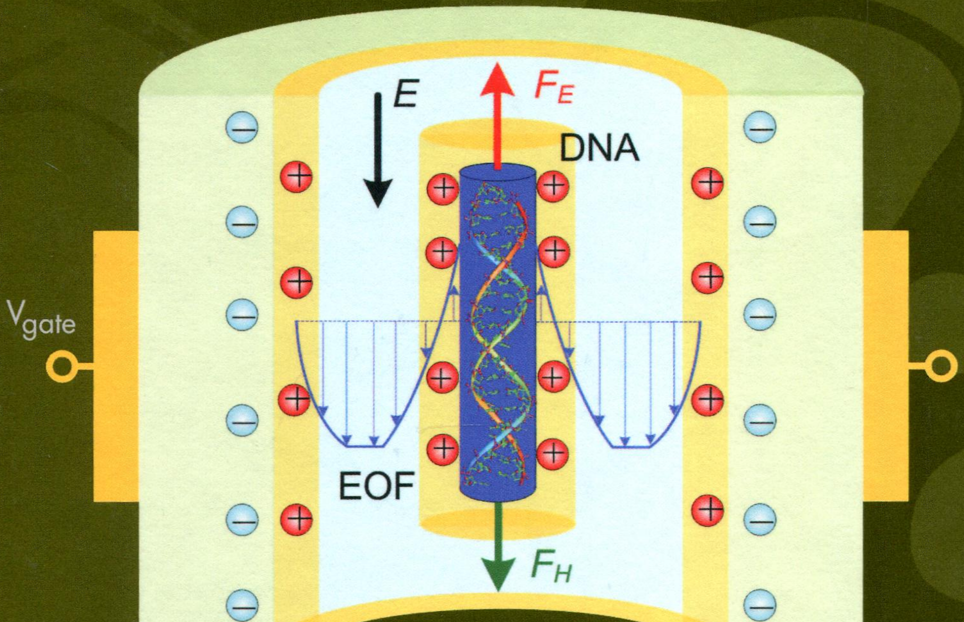
surfactant science series volume **153**

# ELECTROKINETIC PARTICLE TRANSPORT IN MICRO-/NANOFLUIDICS

## Direct Numerical Simulation Analysis




Shizhi Qian • Ye Ai

CRC Press
Taylor & Francis Group

# ELECTROKINETIC PARTICLE TRANSPORT IN MICRO-/NANOFLUIDICS

## Direct Numerical Simulation Analysis


**Shizhi Qian**

*Old Dominion University*
*Norfolk, Virginia, U.S.A.*

**Ye Ai**

*Old Dominion University*
*Norfolk, Virginia, U.S.A.*



CRC Press
Taylor & Francis Group
Boca Raton London New York

CRC Press is an imprint of the
Taylor & Francis Group, an **informa** business

CRC Press
Taylor & Francis Group
6000 Broken Sound Parkway NW, Suite 300
Boca Raton, FL 33487-2742



Printed in the United States of America on acid-free paper
Version Date: 20120409

International Standard Book Number: 978-1-4398-5438-9 (Hardback)



**Library of Congress Cataloging-in-Publication Data**

Qian, Shizhi.
Electrokinetic particle transport in micro-/nanofluidics : direct numerical simulation analysis / Shizhi Qian, Ye Ai.
p. cm. -- (Surfactant science)
Includes bibliographical references and index.
ISBN 978-1-4398-5438-9 (hardback)
1. Electrophoresis. 2. Electrokinetics. 3. Nanofluids. 4. Microfluidics. 5. Molecular biotechnology. I. Ai, Ye, 1983- II. Title.

QP519.9.E434Q24 2012
541'.372--dc23 2011049955

**Visit the Taylor & Francis Web site at**
**http://www.taylorandfrancis.com**

**and the CRC Press Web site at**
**http://www.crcpress.com**

# Contents