Invited Lectures at Universities

139 Michael A. Brook, Sijia Zheng, Miguel Melendez, Yang Chen, Mengchen Liao, Cody B. Gale and Robert Bui, University of Ghent, Belgium

*Controlling silicone material properties using sulfur chemistry*

May 2022

138 Michael A. Brook, Guanhua Lu, Akop Yepremyen, Khaled Tamim, Yang Chen, Sijia Zheng, Cody B. Gale and Angela Li, Danish Technical University,

*Oxidants and Antioxidants in Silicones*

May 2022

137 Michael A. Brook, Techniologicoal University of Dublin, Ireland

*Waste Materials Are Not (Necessarily) a Compromise: Reinforcing Fillers*

May 2022

136 Michael A. Brook (ICUF D’Arcy McGee Beacon Fellowship Lecture), Technological University of Dublin, Ireland

*How Can Silicones Contribute to Sustainability? Dissolving Automobile Tires*

Mar. 2021

135 Michael A. Brook, Bowling Green State University, Chemistry

*Moving Towards Sustainable Silicones, Some Nice Surprises*

Sept. 2020

134 Michael A. Brook, Yang Chen, Andrea Feinle, Kyle Faiczak, Ayodele Fatona, Adrien Lusterio, Jose Moran-Mirabal, Adnan Murad, Andrew Osamudiamen, David Valentini, and Sijia Zhang, Danish Technical University, Lyngby Denmark.

*Combining Saccharides with Silicone Polymers to Improve Sustainability*

Feb. 2020

133 Michael A. Brook, Universiteit van Amsterdam

*The Greening of Silicones: Exploiting Natural Materials*

May 2019

132 Michael A. Brook, Université Paul Sabbatier, Toulouse

*Tailoring Silicone Properties for Interfacial Applications: Limitations and Opportunities*

April 2018

131. Michael A. Brook, Lawrence University, Appleton, Wisconsin

*The Greening of Silicones: Exploiting Natural Materials*

March 2018

130. Pittsburg State University, Pittsburg Kansas, Michael A. Brook,* Scott E. Laengert, Ben Macphail, Robert Bui, Sijia Zheng, Alyssa F. Schneider, Mengchen Liao, Yang Chen and Jianfeng Zhang

*The Greening of Silicones: Exploiting Natural Materials*

Jan. 2018

129. Pittsburg State University, Pittsburg Kansas, Michael A. Brook,* Scott E. Laengert, Robert Bui, Sijia Zheng, Jennifer Morgan, Alyssa F. Schneider, Mengchen Liao, and Yang Chen

Distinguished Polymer Lecture

*An Organic Chemist’s View of Silicones: Searching for Better Control*

Jan. 2018

128. Brockhouse Institute for Materials Research, McMaster University

*Should BIMR Worry If Materials Are Green? The View of a Silicone Chemist*


127. Chemistry, Western University

*Water Responsive Silicone Polymers*


126. Chemistry, Shandong University

*Water Responsive Silicone Polymers*

Nov. 2016
125. Chemical Engineering, Danish Technical University
   Tempest in a C-Cup: Re-Regulating Breast Implants
   Apr. 2016
124. Chemical Engineering, Danish Technical University
   Designing Silicones to Control Interfaces
   Apr. 2016
123. Chemistry, University of Alberta
   Structuring Interfaces with Structured Siloxanes
   Oct. 2015
122. Chemistry, Temple University
   Structuring Interfaces with Structured Siloxanes
   March 2015
121. Chemistry Wilfred Laurier, Waterloo ON,
   Synthetic Strategies to Manipulate Silicone Interfaces
   Jan. 2015
120. AlchemUS (Stellenbosch University Chemistry Society),
   Stellenbosch South Africa
   Breast Implants and Lawsuits: A Tempest in a C Cup?
   Oct. 2014
119. Chemical Engineering, Technical University of Denmark,
   Controlling Interfaces with Silicones
   Nov. 2014
118. Polymer Science and Chemistry, Stellenbosch University, South Africa
   Synthetic Strategies to Manipulate Silicone Interfaces
117. Concordia University, Montreal
   New Strategies to Manipulate Silicone Surfactants with Precise Structures
   Jan. 2013
116. McGill University, Montreal
   Why Can’t Silicones Follow the New Polymer Paradigm? Making Precise Structures
   Nov. 2012
115. University of Massachusetts, Amherst
   Strategies to Structure Functional Silicones
   Sep. 2012
114. McMaster University, The Imposter Syndrome, Current Research in
   Engineering, Science and Technology Conference
   Mar. 2012
113. Queen’s University, Chemical Engineering
   Interfacial Engineering Using Siloxanes
   Feb. 2012
112. CSIRO Melbourne Australia
   Why Don’t People Like Silicones as Biomaterials (and what can we do about it)?
   Apr. 2011
111. INSA, Université de Lyon I, Lyon France
   Strategies for the Synthesis of Hydrophilic Silicones
   March 2011
110. Université Paul Sabatier, Toulouse, France
   Strategies for the Synthesis of Hydrophilic Silicones
   March 2011
109. SUNY Buffalo, NY
   Interfacial Structuring Using Silicon Chemistry
   March 2011
108. CSIRO Melbourne Australia
   Interfacial Control: New Strategies for Functionalizing and Crosslinking Silicones
   Feb. 2011
107. School of Biomedical Engineering, McMaster University
   Strategies to Improve Silicone Elastomer Biocompatibility
   Nov. 2010
106. Soochow University, Suzhou, China
   Silicones: Strategies for Improved Biocompatibility
   Oct. 2010
105. Institute of Chemical Industry of Forest Products, Nanjing China
   Structuring Siloxanes at Interfaces: Exploitation of Natural Materials
   May 2010
104. Beijing University of Chemical Technology
   May 2010
Structuring Siloxanes at Interfaces Surface Manipulation to Improve Silicone Biocompatibility

103. Institute of Chemistry, Chinese Academy of Sciences May 2010

Structuring Siloxanes: New Routes to Silica and Silicone Composites

102. WISE (Women in Science and Engineering), McMaster University March 2010

The imposter syndrome

101. University of Toronto, Canada Jan. 2010

Structuring Siloxanes at Interfaces

100. BIMR, McMaster University Oct. 2009

Surface Manipulation Strategies To Improve Silicone Biocompatibility

99. CSIRO Melbourne Australia May 2009

Controlled Synthesis at Silicone Interfaces: New Strategies for Improved Biocompatibility

98. Flinders University, Adelaide, Australia May 2009

Synthesis of Structured Inorganic Materials Using Silicon-Based Surfactants

97. Queensland University of Technology, Brisbane, Australia May 2009

Controlled Synthesis at Silicone Interfaces: New Strategies for Improved Biocompatibility

96. Rensselaer Polytechnic Institute, Troy NY, The Reed Lecture April, 2009

Controlled Synthesis at Silicone Interfaces: New Strategies for Improved Biocompatibility

95. Michael A. Brook, University of British Columbia (Pharmacy) Oct. 2008

Using Silicones with Pharmaceutical Actives: Strategies for Protein Delivery

94. Michael A. Brook, University of Western Ontario May 2008

Using Silicones to Control Dynamic Interfaces: Silicone Biomaterials to Gold Crystals

93. Michael A. Brook, Case Western Reserve University, Feb. 2008

Using Silicones to Control Dynamic Interfaces: Silicone Biomaterials to Gold Crystals

92. Michael A. Brook, Trent University, Peterborough, ON Sept. 2007

Dynamic Interfaces: Synthetic Approaches to Controlling Morphology

91. Michael A. Brook, Department of Chemistry, Universidad Guanajuato, Aug. 2007

Binding cells to silicone and TiO$_2$ surfaces

90. Michael A. Brook, Queen’s University, Belfast, N. Ireland May 2007

Making Silicones More Biocompatible: Using Synthesis to Structure Biomedical Interfaces

89. Michael A. Brook, University of Limerick, Ireland Apr. 2007

Dynamic Interfaces: Synthetic Approaches to Controlling Morphology

88. Michael A. Brook, Trinity College, Dublin, Ireland Mar. 2007

Dynamic Interfaces: Synthetic Approaches to Controlling Morphology

87. Michael A. Brook, NUI Galway, Chemistry, Ireland Mar. 2007

Dynamic Interfaces: Synthetic Approaches to Controlling Morphology

86. Michael A. Brook, University College Cork, Ireland Mar. 2007

Dynamic Interfaces: Synthetic Approaches to Controlling Morphology

85. Michael A. Brook, NCBES NUI Galway, Ireland Jan. 2007

Making Silicones More Biocompatible: Using Synthesis to Structure Biomedical Interfaces

84. Michael A. Brook, McMaster University, BIMR Nov. 2006

Using Synthesis to Structure Interfaces: Making Silica and Silicones Biocompatible

83. Michael A. Brook, McMaster University, BIMR Summer Lecture Series June 2006

Controlling interfaces for biomedical devices: using silica and silicones (with a comment on breast implants)
82 Michael A. Brook, McMaster University, Chemical Engineering March 2006. *Using Synthesis to Structure Interfaces: Making Silica and Silicones Biocompatible*

81 Michael A. Brook, McMaster University Undergraduate Chemistry Society March 2006 *The Imposter Syndrome: How to succeed (?) in spite of chemical ignorance*

80 Université de Montpellier, II, France Jan. 2006
79 Brock University, Chemistry Department Oct. 2004
78 University of Waterloo, Chemistry Department Oct. 2004

77 McMaster University, BIMR Summer Research Program Weekly Seminar Series, June 2004 *Controlling protein stability in silicones and silica: Synthesis of new biomaterials*

76 Institute of Chemistry, Chinese Academy of Sciences, Beijing Nov. 2003 *Using Silicone:Protein Interactions to Stabilize Water/Oil Interfaces and Protein Structure*

75 Qingdao University of Technology Nov. 2003 *Stereocontrol Using Silyl Groups: Enantioselective Reductions and Claisen Rearrangements*

74 Huazhong University of Science and Technology Nov. 2003 *Using Silicone:Protein Interactions to Stabilize Water/Oil Interfaces and Protein Structure*

73 Wuhan University of Technology Nov. 2003 *Protein-Doped Mesoporous Silica for Drug Screening Applications*

72 Nanjing University Nov. 2003 *Using Silicone:Protein Interactions to Stabilize Water/Oil Interfaces and Protein Structure*

71 UWEB (University of Washington Engineered Biomaterials), Seattle, May 2003 *Stabilizing Proteins in Silica and Silicones*

70 Ian Wark Research Institute, University of South Australia, Adelaide, South Australia Michael A. Brook, Frank LaRonde, Mustafa Mohamed and Forrest Li March 2003 *Stereocontrol Using Silyl Groups: Enantioselective Reductions and Claisen Rearrangements*

69 Ian Wark Research Institute, University of South Australia, Adelaide, South Australia M. A. Brook, Dan Chen, Kui Guo, Zhang Zheng, John Brennan, and Paul Zelisko March 2003 *Formation of Protein-Containing Controlled Pore Silica for Drug Discovery*

68 Perspectives on Silicon (6 hours lectures during a 30 hour short course), Ian Wark Research Institute, University of South Australia, Adelaide, South Australia July 2002

67 Queensland University of Technology, Brisbane, Australia June 2002 *Bringing Organic Chemistry to Silicon-based Interfaces*

66 University of Sydney, Australia June 2002 *The Passivation of Silica and Protein/Water Interfaces Using Silane Coupling Agents and Functional Silicones.*

65 Flinders University, Adelaide, Australia June 2002 *Stabilization of Water-in-Silicone Oil Emulsions: Surfactants Formed by the Interaction of Proteins/enzymes and Functionalized Silicones*

64 University of South Australia, Adelaide, Australia June 2002 *Preparing and Passivating Silica: Matching Surface Chemistry to Application*

63 McMaster University: Undergraduate Chemistry Series March 2002 *The Passivation of Silica and Protein/Water Interfaces Using Silane Coupling Agents and Functional Silicones.*
<table>
<thead>
<tr>
<th>Title</th>
<th>Location/Institution</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protéines chez soi: Dans les silicones et dans la silice (New homes for proteins in silicones and silica)</td>
<td>University of Dresden, Germany, Institute of Polymer Research</td>
<td>Feb. 2002</td>
</tr>
<tr>
<td>The passivation of silica and silicone surfaces using silane coupling agents and proteins.</td>
<td>University of Toronto</td>
<td>Feb. 2001</td>
</tr>
<tr>
<td>Silicone/protein interactions: Modifying hydrophobic/hydrophilic interactions to control both protein and interfacial stability</td>
<td>University of Windsor</td>
<td>Sept. 2000</td>
</tr>
<tr>
<td>Exploiting Extracoordinate Silicon: Enantioselective Reductions and Aldol Reactions Catalyzed by Chiral Amines (and some Silicone-Protein Stuff)</td>
<td>Institut National des Sciences Appliquées de Lyon</td>
<td>July 2000</td>
</tr>
<tr>
<td>Silicium à l’Interface: Silanes et Silicones Fonctionnalisés</td>
<td>Université Louis Pasteur</td>
<td>June 2000</td>
</tr>
<tr>
<td>Silicone at the Interface: New Surface Active Silanes and Silicones</td>
<td>Université de Bordeaux I</td>
<td>May 2000</td>
</tr>
<tr>
<td>Exploiting Extracoordinate Silicone: Enantioselective Reductions and Aldol Reactions Catalyzed by Chiral Amines</td>
<td>University of Twente</td>
<td>May 2000</td>
</tr>
<tr>
<td>Chiral Extracoordinate Hydrosilanes Derived from Bidentate Ligands: Enantioselective Reduction of Ketones</td>
<td>University of Amsterdam</td>
<td>May 2000</td>
</tr>
<tr>
<td>Gifts From Nature: New Materials From Silicones and Biopolymers</td>
<td>Kyoto University</td>
<td>June 1999</td>
</tr>
<tr>
<td>Chiral Extracoordinate Silanes: Catalytic and Enantioselective Reduction</td>
<td>University of Hong Kong</td>
<td>May 1999</td>
</tr>
<tr>
<td>Gifts From Nature: New Materials From Silicones and Biopolymers</td>
<td>University of Hong Kong</td>
<td>May 1999</td>
</tr>
<tr>
<td>Chiral Extracoordinate Silanes Derived From Histidine: Catalytic and Enantioselective Reduction</td>
<td>Hong Kong University of Science and Technology</td>
<td>May 1999</td>
</tr>
<tr>
<td>Confusing Nature: What does Lemon Pledge have to do with Oral Vaccines?</td>
<td>McMaster University President’s Stewardship “Over the Ivy Wall”</td>
<td>March 1999</td>
</tr>
<tr>
<td>Confusing Nature: A Look at the Hydrophobization of Biopolymers Using Silanes and Silicones</td>
<td>Chemical Engineering, McMaster University</td>
<td>Feb. 1999</td>
</tr>
<tr>
<td>Stereoselective Reduction of Ketones by Histidine: Alkoxy silane Complexes</td>
<td>Brock University</td>
<td>Feb. 1999</td>
</tr>
<tr>
<td>Stereoselective Reduction of Ketones by Histidine: Alkoxy silane Complexes</td>
<td>Mount Allison University</td>
<td>Nov. 1998</td>
</tr>
</tbody>
</table>
Confusing Nature: A Look at the Hydrophobization of Biopolymers Using Silanes and Silicones

43 University of New Brunswick Nov. 1998
Confusing Nature: A Look at the Hydrophobization of Biopolymers Using Silanes and Silicones

42 Acadia University Nov. 1998
Confusing Nature: A Look at the Hydrophobization of Biopolymers Using Silanes and Silicones

41 Dalhousie University Nov. 1998
Confusing Nature: A Look at the Hydrophobization of Biopolymers Using Silanes and Silicones

40 McMaster University Board of Governors Oct. 1998
Combining Silicones and Biopolymers: New Materials

39 Telemark University, Porsgrunn, Norway Feb. 1998
Silicone Degradation Mechanisms

Silane and Silicone Coupling Agent Chemistry: Are Biopolymer Surfaces Like Siliceous Surfaces?

37 University of Toronto, Faculty of Pharmacy, Oct. 1997
Using Silicon Chemistry in Drug Delivery: Prodrugs Based on Modified Silica and Oral Protein Delivery Using Silicones

36 University of British Columbia Sept. 1997
Modifying Biopolymers with Silanes and Silicones

35 Brockhouse Institute for Materials Science, McMaster University Jan. 1997
Hard and soft siloxanes: hydrosilsequioxanes: platinum catalysts and silicone: protein copolymers

34 McMaster Undergraduate Chemistry Club Nov. 1996
Silicon in Biology
Organosilanes as Protecting Groups: Different Approaches to the Stabilization of Small Molecules, Polymers, Transition Metals and Surfaces

Université Paul Sabatier, Toulouse, France (3 lectures) June 1996
Organosilanes in an Inorganic World and Inorganic Silicon in an Organic World

33 What Happens When Silicon Meets Biology May 1996
Stabilized Group 14 Cations

32 Stabilized Group 14 Cations May 1996
Université de Bordeaux I, France, (3 lectures) June 1996
Organosilanes in an Inorganic World and Inorganic Silicon in an Organic World

30 Universidad del Pais Vasco, San Sebastian, Spain June 1996
What Happens When Silicon Meets Biology

29 Stabilized Group 14 Cations June 1996
Silicones at the Interface: Starch/Protein/Silicone Microparticles as Oral Vaccines

28 What Happens When Silicon Meets Biology May 1996
Université de Namur, Belgium
Stabilizing β-Cations and Protecting Transition Metals with Silicon

27 Stabilized Group 14 Cations June 1995
Rijks Universiteit Utrecht
Controlled Modification of Silica Surfaces: Polyolefin and Silicone Sterically Stabilized Silica Colloids

26 Landbouw Universiteit Wageningen, Wageningen, Netherlands May 1996
Silicone at the Interface: What happens when it's found in unusual places

25 Queen's University Sept. 1994
Stabilizing Group 14 Cations
<table>
<thead>
<tr>
<th>No.</th>
<th>Institution</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>McMaster University</td>
<td>Oct. 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon Mediated Cope-type Cyclizations OR After one year in the Netherlands, what does Fokkje (fok-ya) really mean?</em></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>University of Western Ontario</td>
<td>Sept. 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon Mediated Cope-type Cyclizations</em></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>University of Montpellier</td>
<td>May 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon Bearing Electron Withdrawing Groups: Exploiting the Differences</em></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>University of Toulouse</td>
<td>May 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon Bearing Electron Withdrawing Groups: Exploiting the Differences</em></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>University of Bordeaux</td>
<td>May 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon as Mediator: Making the Drugs and Delivering Them to the Patient</em></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Free University of Amsterdam</td>
<td>March 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon Bearing Electron Withdrawing Groups: Exploiting the Differences</em></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Open University, Milton Keynes, England</td>
<td>March 1993</td>
</tr>
<tr>
<td></td>
<td>A <em>Silicon Transplant: From the $\beta$-effect to Polymers (focus on silicon extracoordination)</em></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>University of Sussex</td>
<td>March 1993</td>
</tr>
<tr>
<td></td>
<td>A <em>Silicon Transplant: From the $\beta$-effect to Polymers (focus on silicon hyperconjugation)</em></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>University of Utrecht:</td>
<td>Feb. 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon Bearing Electron Withdrawing Groups: Exploiting the Differences</em></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>University of Groningen</td>
<td>Feb. 1993</td>
</tr>
<tr>
<td></td>
<td><em>Silicon Bearing Electron Withdrawing Groups: Exploiting the Differences</em></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>University of Amsterdam</td>
<td>Jan. 1993</td>
</tr>
<tr>
<td></td>
<td>A <em>Silicon Transplant: From the $\beta$-effect to Polymers (focus on synthesis)</em></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Technische Hochschule Darmstadt</td>
<td>Jan. 1993</td>
</tr>
<tr>
<td></td>
<td>A <em>Silicon Transplant: From the $\beta$-effect to Polymers (focus on $\beta$-effect)</em></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Universität Kaiserslautern</td>
<td>Jan. 1993</td>
</tr>
<tr>
<td></td>
<td>A <em>Silicon Transplant: From the $\beta$-effect to Polymers (focus on silicon hyperconjugation)</em></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>ETH-Zürich (Seebach Group Meeting)</td>
<td>Feb. 1993</td>
</tr>
<tr>
<td></td>
<td>A <em>Silicon Transplant: From the $\beta$-effect to Polymers</em></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Centre of Advanced Scientific Investigation (CINVESTAV) Mexico City, (2 lectures)</td>
<td>March 1992</td>
</tr>
<tr>
<td></td>
<td><em>Polymeric Materials Derived from the $\beta$-Effect</em></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The <em>$\beta$-effect: Modifying the Ligands on Silicon</em></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Guelph University</td>
<td>March 1992</td>
</tr>
<tr>
<td></td>
<td>A <em>Silicon Transplant: From the $\beta$-effect to Polymers</em></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>SUNY Binghampton (New York)</td>
<td>March 1991</td>
</tr>
<tr>
<td>4</td>
<td>Universiteit van Amsterdam</td>
<td>July 1990</td>
</tr>
<tr>
<td>3</td>
<td>McMaster University (Peacock Lecture Series)</td>
<td>Oct. 1989</td>
</tr>
<tr>
<td>2</td>
<td>University of Western Ontario</td>
<td>Oct. 1988</td>
</tr>
<tr>
<td>1</td>
<td>Université de Montréal</td>
<td>Dec. 1988</td>
</tr>
</tbody>
</table>