



## Illinois Wesleyan University Digital Commons @ IWU

John Wesley Powell Student Research  
Conference

1999, 10th Annual JWP Conference

Apr 17th, 1:30 PM - 2:30 PM

# Synthesis of Difunctional Amines and Subsequent Reaction with the Hexamolybdate Ion: Components for Supramolecular Architectures

Jonathan Brockman

*Illinois Wesleyan University*

Rebecca Roesner, Faculty Advisor

*Illinois Wesleyan University*

Follow this and additional works at: <http://digitalcommons.iwu.edu/jwprc>

Jonathan Brockman and Rebecca Roesner, Faculty Advisor, "Synthesis of Difunctional Amines and Subsequent Reaction with the Hexamolybdate Ion: Components for Supramolecular Architectures" (April 17, 1999). *John Wesley Powell Student Research Conference*. Paper 17.

<http://digitalcommons.iwu.edu/jwprc/1999/posters2/17>

This Event is brought to you for free and open access by The Ames Library, the Andrew W. Mellon Center for Curricular and Faculty Development, the Office of the Provost and the Office of the President. It has been accepted for inclusion in Digital Commons @ IWU by the faculty at Illinois Wesleyan University. For more information, please contact [digitalcommons@iwu.edu](mailto:digitalcommons@iwu.edu).

©Copyright is owned by the author of this document.

## Poster Presentation 4

**SYNTHESIS OF DIFUNCTIONAL AMINES AND SUBSEQUENT REACTION  
WITH THE HEXAMOLYBDATE ION:  
COMPONENTS FOR SUPRAMOLECULAR ARCHITECTURES**

Jonathan T. Brockman and Rebecca Roesner\*  
Department of Chemistry, Illinois Wesleyan University

The practical limits of manufacturing smaller and smaller electronic components is fast approaching, and scientists have been exploring the use of molecular and macromolecular electronic devices. Supramolecular systems have been designed and demonstrated to function as molecular switches, molecular wires or photoelectric devices. One supramolecular structure is the rotaxane which is composed of a linear molecular string (linker) threaded through a macrocyclic molecular ring with bulky blocking groups attached to the ends of the linker to prevent dethreading. Two possible routes to the synthesis of difunctional amine linkers have been compared.<sup>1,2</sup> Aspects of both procedures were combined to obtain highest purity (figure 1). Our current goal is reaction of one of the resultant difunctional amines with two equivalents of tetrabutylammonium hexamolybdate(VI) (figure 2).

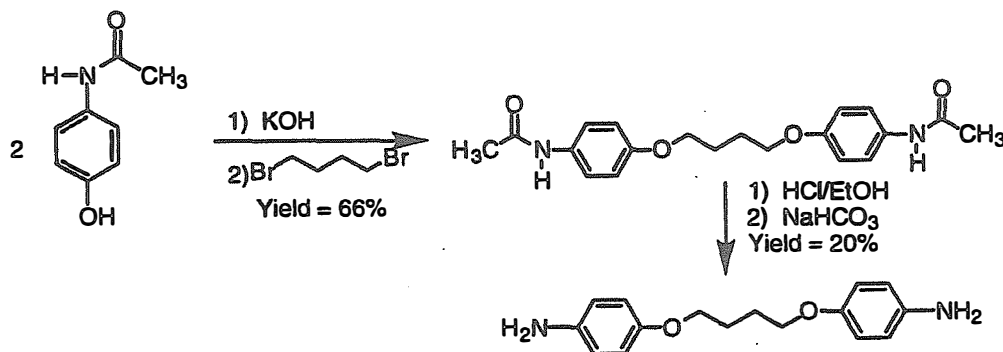


Figure 1

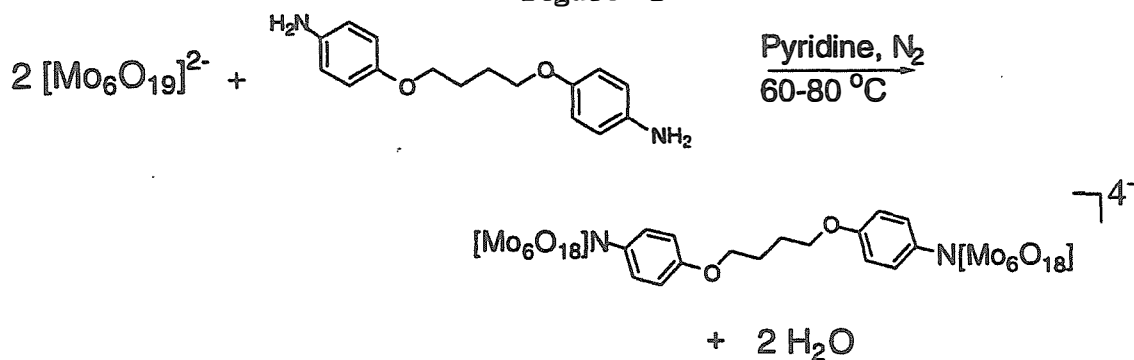


Figure 2

<sup>1</sup>Bartulin, J.; Ramos, M. L.; Rivas, B. L. *Polymer Bulletin* 1986, 15, 405-409.

<sup>2</sup>Griffin, Anselm C.; Britt, Thomas R.; Hung, Robert S. L.; Steele, Marcus L. *Mol. Cryst. Liq. Cryst.* 1984, 105, 305-314.