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Synthetic Studies on Several Heterocycles - NMR Spectroscopic Studies of a Few Potentially Isolable Atropisomeric Benzazepines

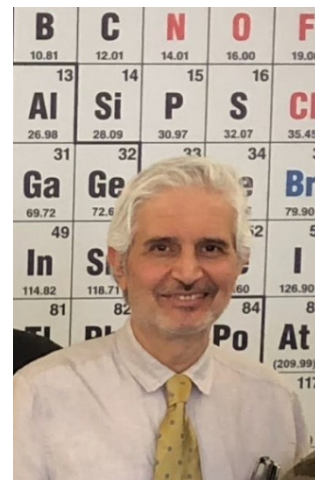
Dr. Sasan Karimi

Professor
Department of Chemistry
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Thursday, November 7, 2024

6:45 PM

Queensborough Community College
Science Building, Room 112
(Registration required prior to event)
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Abstract: This talk will focus on some of the chemistry of pyrroles, benzazepines, and quinolines. Pyrroles have been synthesized from azido dienes, but the corresponding reactions of structurally similar nitrodienes had not been investigated until it became the focus of our study. Using this approach, we were able to synthesize several biologically active pyrroles. We have also reported a synthesis of 2-aryl-3H-1-benzazepines, in one step from 2-haloanilines and acetophenone derivatives. The impetus for that study was the possibility of new and efficient preparations of biologically active 1-benzazepines. To achieve this, we tried to functionalize the C-3 position with NBS. Instead of the expected bromobenzazepine, the reaction underwent a ring-contraction to produce quinoline. NMR experiments at room temperature show that the 3H-benzazepines undergo fast conformational exchange on the NMR time scale unless there is an alkyl substituent at C5. We have synthesized a few benzazepine derivatives that have slowed down the rate of interconversion of conformational enantiomers to allow possible separation and characterization of atropisomers.

Biography: Dr. Sasan Karimi earned his MA from City College of New York (CCNY) and his PhD in Chemistry from the City University of New York (CUNY) in 1991. He was an assistant professor of chemistry at Purchase College, SUNY, for four years (1994-1998) and has been a full-time faculty member at Queensborough Community College (QCC) since 1998. He is the author of more than 30 articles with projects involving syntheses of sesquiterpenoid natural products (e.g. sativene, longifolene, and ylangene), benzazepines, quinolines, and pyrroles. Some of his past and present collaborations are with faculty members at Baruch College, Queens College, and NYU. He developed a special topic course in Chemistry called "Chemistry and the Arts" when he first joined QCC. The course is now very popular and is required for students in the Digital Arts and Photography program.

Presented by the Long Island Subsection of the American Chemical Society