

Arsen Galustyan, Chemistry

University: High Chemical College Russian Academy of Science
Year in School: Senior
Hometown: Moscow, Russia
Faculty Mentor: Dr. Paul R. Sharp, Chemistry
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Synthesis and characterization of nickel polycyclic aromatic carbon compounds

Arsen Galustyan and Paul R. Sharp

Polycyclic aromatic carbon (PAC) compounds show useful chemical, biological, photophysical, electrical, structural and magnetic properties. The development of well-defined transition metal organometallic chemistry of polycyclic aromatic carbon (PAC) compounds has been limited but should be useful for functionalizing PAC's. The goal of our research was to explore the chemistry of Ni PAC compounds and confirm the existence and observe properties of 4- and 5-membered PAC nickelacycles with different types of chelating phosphorous ligands. Different Ni PAC derivatives were obtained and characterized. Their decomposition and reaction chemistry were studied. The dependence of stability of the organometallic complexes on the relatively of bulkiness of ligand substituents and the ring size was confirmed. The actual Ni compounds decompose to products of coupling yielding an aromatic carbon system.

