Episode abstract

There is one thing Robert Gilliard, Jr. refutes categorically; that there is no innovation in chemistry. As an innovator, he has made a career on the risky proposition of finding value in a part of the periodic table that has been historically underappreciated, the main-group elements.

In his fearless exploration of the properties of magnesium, beryllium, bismuth and boron, Robert is discovering new chemistries and inventing new applications. He believes in moving beyond the well of tried-and-true chemistry to explore less-traditional approaches and making them part of the standard chemistry toolset.

This is a classic Bringing Chemistry to Life episode; one that those genuinely passionate about chemistry will love. Paolo and Robert speak about new properties, reactivities and applications in synthetic chemistry and material science, all coming from the “forgotten,” abundant and cheap main-group elements. A wonderful story of relentless pursuit of knowledge that proposes a vision for a very different chemistry of tomorrow.

About our guest

Dr. Robert J. Gilliard, Jr.
Assistant Professor, Department of Chemistry, University of Virginia

Robert’s group site: https://gillardgroup.chem.virginia.edu/

C&EN Talented 12 profile of Robert:

Recent Publications from Robert:
- Stabilization of the Elusive 9-Carbene-9-Borafluorene Monoanion
- Surfactant Removal for Colloidal Nanocrystal Catalysts Mediated by N-Heterocyclic Carbenes
- s-Block Multiple Bonds: Isolation of a Beryllium Imido Complex
- A Stable, Crystalline Beryllium Radical Cation
- Stable Borepinium and Borafluorenium Heterocycles: A Reversible Thermochromic “Switch” Based on Boron Oxygen Interactions

Robert’s Content Recommendations:
- Forgotten Genius (a NOVA documentary episode on the chemistry and personal life of Dr. Percy Julian)
- National Organization of Black Chemists and Chemical Engineers (an organization website)
- Law and Order: SUV (a show enjoyed by Robert)
- Xiaomanyv (a YouTube channel on how languages bring people together)
- Comedy Central Stand-Up (Robert’s favorite comedians: Katt Williams, Wanda Sykes, Eddie Murphy & Chris Rock)

This podcast series is available via the following links

Bringing Chemistry to Life podcast series
Season 2: The 2020 C&EN’s Talented 12
Episode 6: The charm of the forgotten elements