



Prime Minister of Tatarstan, Ildar Khalikov (right), presents Michael Blackburn with the Arbuzovs Prize.

Juxtaposing protein crystallography and ^{19}F NMR spectroscopy to deliver accurate, and sometimes critical, analyses of these complexes, Blackburn has rationalized major features of enzymatic phosphoryl transfer in terms of the “anionic shield” of phosphate esters and “charge balance” as a hypothesis explaining how enzymes respond to it. These studies are now demonstrating the relative simplicity of enzyme catalysis of kinases, phosphatases, and mutases even though these processes include some of the most remarkable accelerations of any enzymatic reactions. In conclusion, these investigations lead to the conclusion that phosphorus is the unique element whose oxyacids are capable of fulfilling the multiple roles of phosphate esters in terrestrial life and fully justify Lord Todd’s 1981 prediction that phosphorus (sic) will play the same roles in life wherever it is found in the universe.

Blackburn has been a member of the IUPAC Organic and Biomolecular Division on and off since 2000. He returns this year as a titular member.

Gold Book PDF

In October 2011, version 2.3 of the Gold Book was released, completing IUPAC project 2009-038-1-024. Entries with related content were merged in this version, which includes an updated FAQ and an experimental PDF rendering of the whole Gold Book in one file.

 goldbook.iupac.org

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