Graded algebras and polynomial identities

Eli Aljadeff
Technion, Haifa, Israel
elialjadeff@gmail.com

Connections (or "bridges") between PI theory (polynomial identities) and group gradings on associative algebras are quite well known for more than 30 years. For instance, Kemer applied the theory of "super algebras" in order to solve the famous Specht problem for nonaffine PI algebras. Our interest is in the opposite direction. We apply PI theory in order to solve a conjecture of Bahturin and Regev on "regular G-gradings" on associative algebras where G is a finite abelian group. Moreover, we show how to extend it to nonabelian groups. As a second application, we present a Jordan's like theorem on G-gradings on associative algebras.

Joint work with Ofir David (Technion, Israel).