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## GRADED ALGEBRAS AND POLYNOMIAL IDENTITIES

### ABSTRACT

Connections (or “bridges”) between PI theory (polynomial identities) and group gradings on associative algebras are quite well known for more than 30 years, where applications appear in both directions. For instance, Kemer applied the theory of “super algebras” in order to solve the famous Specht problem (to be explained in the lecture) for nonaffine PI algebras. In the other direction, PI theory is used in order to solve a conjecture of Bahturin and Regev on “regular gradings” on associative algebras over a field of characteristic zero.

In the lecture I’ll recall both subjects (PI theory and  $G$ -gradings) and explain how they are related. As an application, I’ll present a (Jordan’s like) theorem on  $G$ -gradings on associative algebras. The last part is joint work with Ofir David.