# Polynomial identities and graded algebras 

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We consider $G$-graded algebras and their corresponding graded identities. In the lecture, I'll present generalizations of some fundamental results in PI theory (originally proved by Kemer for $G=\{e\}$ ) in the context of $G$-graded algebras where $G$ is an arbitrary finite group. The same statements for $H$-comodule algebras (where $H$ is an arbitrary semisimple Hopf algebra) are open.

