1083-13-27 **Jia Huang*** (huang338@umn.edu), Minneapolis, MN 55455. *A gluing construction for polynomial invariants.*

We give a *polynomial gluing construction* of two groups $G_X \subseteq GL(\ell, \mathbb{F})$ and $G_Y \subseteq GL(m, \mathbb{F})$ which results in a group $G \subseteq GL(\ell + m, \mathbb{F})$ whose ring of invariants is isomorphic to the tensor product of the rings of invariants of G_X and G_Y. In particular, this result allows us to obtain many groups with polynomial rings of invariants, including all p-groups whose rings of invariants are polynomial over $\mathbb{F}_p$, and the finite subgroups of $GL(n, \mathbb{F})$ defined by sparsity patterns, which generalize many known examples. (Received July 20, 2012)