1084-13-227 **Mark Batell*** (mark.batell@ndsu.edu) and **Jim Coykendall**. *A note on factorization in polynomial rings.* Preliminary report.

Let R be a domain with quotient field K. Recall that $\rho(R)$, the elasticity of R, is defined by $\rho(R) = \sup\{\frac{m}{n} | \alpha_1\alpha_2\cdots\alpha_n = \beta_1\beta_2\cdots\beta_m,\ \alpha_i, \beta_j \text{ irreducible}\}$. Ideally one would have $\rho(R) = 1$, because then all factorizations of an element of R into irreducibles have the same length. To show that $\rho(R) = 1$, a well-known strategy is the following or a variation of the following: find a domain T containing R such that $\rho(T) = 1$ and every irreducible element of R is irreducible in T. For example, a sufficient condition for the polynomial ring $R[X]$ to have elasticity 1 is that every nonconstant irreducible polynomial $f \in R[X]$ be irreducible in $K[X]$. We will determine the integral domains R whose polynomial rings satisfy this condition. (Received September 02, 2012)