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Tianyuan Xu* (tianyuan@uoregon.edu), Department of Mathematics, University of Oregon, Eugene, OR 97403. *Fusion rules for some tensor categories attached to Kazhdan-Lusztig cells in Coxeter groups*. Preliminary report.

We recall Lusztig's construction of tensor categories attached to Kazhdan-Lusztig cells in Coxeter groups, and present some results on the Grothendieck rings of these categories. These categories were first constructed for finite and affine Weyl groups using perverse sheaves on flag manifolds, and the construction was later generalized to all Coxeter groups using the language of Soergel bimodules, but the Grothendieck rings are known to be isomorphic to Lusztig's asymptotic Hecke algebras, allowing us to study these rings using more elementary methods. We give explicit descriptions of the structure of these Grothendieck rings for certain cases. In particular, we discuss cases where the concerned tensor category is fusion and provide examples where the Grothendieck rings coincide with free fusion semi-rings arising from partition quantum groups. (Received September 13, 2016)