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Daniel Orr and **Mark Shimozono*** (mshimo@math.vt.edu). *Specializations of nonsymmetric Macdonald-Koornwinder polynomials.*

We generalize the Ram-Yip formula for the nonsymmetric Macdonald polynomials $E_\lambda(X; q; t_\bullet)$ to nonreduced affine root systems. We obtain combinatorial formulas for $E_\lambda(X; q; 0)$ for all affine root systems. For an untwisted affine algebra, Lenart, Naito, Sagaki, Schilling and the second author had obtained this result as well as connections with Kirillov-Reshetikhin characters and level-zero Lakshmibai-Seshadri paths. To obtain this formula for $A_{2n}^{(2)}$ and its affine dual, we use the nonreduced Ram-Yip formula for nonsymmetric Koornwinder polynomials. These $t = 0$ formulas require a generalization of the notion of quantum Bruhat graph (which came from quantum cohomology of flag manifolds) from untwisted affine root systems to any affine root system. Cherednik and the first author studied $E_\lambda(X; q; \infty)$ in relation to the difference Toda system and conjectured that it describes the PBW filtration of an affine Demazure module. We obtain a combinatorial formula for this case and use it to verify their conjecture about the coefficients of extremal weights. We also obtain a formula for $E_\lambda(X; \infty; t)$, which are the Whittaker functions studied by Brubaker, Bump, and Licata. (Received September 03, 2013)