

## ON MINIMAL ENERGIES OF TREES WITH GIVEN DIAMETER\*

SHUCHAO LI<sup>†</sup> AND NANA LI<sup>†</sup>

**Abstract.** The energy of  $G$ , denoted by  $E(G)$ , is defined as the sum of the absolute values of the eigenvalues of  $G$ . In this paper, the trees with a given diameter having the minimal energy are determined by three specific tree operations; using this method, together with previous work, a conjecture proposed by B. Zhou and F. Li [*J. Math. Chem.*, 39:465–473, 2006] is completely solved.

**Key words.** Energy, Tree, Pendent vertex, Diameter.

**AMS subject classifications.** 05C50, 05C35.

---

\*Received by the editors January 7, 2008. Accepted for publication August 17, 2008. Handling Editor: Stephen J. Kirkland.

<sup>†</sup>Faculty of Mathematics and Statistics, Central China Normal University, Wuhan 430079, P.R. China (lscmath@mail.ccnu.edu.cn, Shuchao Li). The research was partially supported by National Science Foundation of China (Grant No. 10671081).