FIG. 6: Shift of glass transition temperature against (pore diameter)$^{-1}$. Open circles display the maximum negative pressure contribution (see chapter III. C. of Ref. 23), boxes are $\Delta T_g s$ from the same reference, filled triangles show literature values from Ref. 21. Open triangles are the present results, and crosses mark corresponding literature data from Ref. 25.

As already mentioned above, Dalle-Ferrier et al. [15] have given an expression for the number $N_{corr,4}$ of molecules that are dynamically correlated over a time interval of the order of τ as

$$N_{corr,4}(T) = \frac{T^2}{\Delta C_p}\left(max_\omega \frac{\partial \chi(T,\omega)}{\partial T}\right)^2 \tag{5}$$

where ΔC_P in units of the gas constant R is the excess specific heat of the glass-forming liquid at constant pressure [15] and $\chi(T,\omega)$ is a suitable dynamic correlation function. Very often glass-forming materials are studied by dielectric spectroscopy measurements and therefore the dynamic susceptibility is identified with the dielectric susceptibility. To estimate the number of dynamically correlated molecules, we apply two different procedures: In the first we are using $\chi(T,\omega) := \frac{Y'(\omega)-Y'(\infty)}{Y'(0)-Y'(\infty)}$ in Eq. (5) to analyze the data directly, i. e. without any fit procedure in between. In the second case we rewrite Eq. (5) with Eq. (2) yielding

$$N_{corr,4}(T) = \frac{T^2}{\Delta C_p}f(\gamma)^2\left(\frac{\partial ln\tau}{\partial T}\right)^2 \tag{6}$$

where $\tau(T)$ is obtained from fits of the data in Fig. 3 and $f(\gamma) = \frac{sin[\gamma\,arctan(\frac{1}{\gamma})]+\frac{1}{\gamma}cos[\gamma\,arctan(\frac{1}{\gamma})]}{(1+\gamma^{-2})^{1+\gamma/2}}$ results from the Cole-Davidson dynamic response function and is the analog to the stretched