T.4. E.V. THOMAS–Development of Energy saving forms of rubber–1985–Dr. D. Joseph Francis

This thesis describes several methods of saving energy in natural rubber processing. In the conventional processing the latex obtained from the rubber tree is coagulated and then the coagulum is dried. Then the rubber is masticated and then mixed with compounding ingredients. The compound is then shaped and vulcanized. The following are the energy saving methods extensively discussed in the thesis.

1. **Oil extended natural rubber:** Oil extension of natural rubber is done by emulsifying mineral oil and mixing with rubber latex. The mixture is then coagulated to precipitate the oil extended natural rubber. This process is found to save much energy in the compounding step.
2. **Incorporation of peptisers:** In this study dispersion of peptisers are added to latex and then coagulated and processed. This procedure is found to cut the energy required for mastication to a large extent.
3. **Use of particular clones of rubber tree:** The rubber from different clones is found to have different viscosities. So selection of rubber from selected clones could drastically reduce the energy in the mastication step.
4. **Latex stage compounding:** Latex stage compounding is found to be a very useful technique in saving energy compared to conventional rubber processing.