

LII in a high vacuum and up date and LII in carbon black from a particle generator

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LII in a high vacuum was first studied in detail last year and some preliminary findings were given at the LII workshop in Duisburg (2005) and subsequently published in a special issue of Applied Physics. This paper gives a brief up-date of this work and includes further detailed analysis of the experimental results. Further details on the estimates of $E(m)$ has been made using a highly accurate NRC LII system. The results suggest that aggregation and agglomeration can be important.

We have performed LII measurement on carbon black agglomerates generated using by dispersing polarised carbon black in water and then promptly evaporating a fine aerosol mist. The generated carbon black agglomerates have been characterised by TEM. We have estimated $E(m)$ from heating and also shown an apparent variation of both soot volume fraction and estimates of primary particle size with fluence. We believe the results to be consistent with break-up of the agglomerates which is enhanced by fluence.