## E1-16 Performance of a low cost second order electrostatic ion mirror for a time-of-flight plasma desorption mass spectrometer

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A second order electrostatic ion mirror (**ESM**) has been designed and constructed to enhance the mass resolution of the newly built time-of-flight plasma desorption mass spectrometer at the Dept. of Physics, University of Colombo. The ion mirror, not only minimizes the time uncertainty which arises due to initial energy distribution of the secondary molecular ions, but also increases the time-of-flight of the molecular ions giving rise to a better mass resolution. Performance of the ESM was evaluated using the inorganic compound CsBr

and several organic compounds. Data obtained with reflected mode showed an improvement of mass resolution by a factor which is greater than 4, over the linear mode. The signal to background ratio has also been improved. In the construction, locally available low cost materials have been used and the total cost of the mirror was found to be only US$ 100, which is less by a factor of 100 when compared with commercially available mirrors.