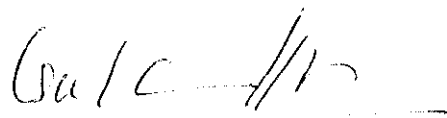


C E R T I F I C A T E

Certified that the thesis entititled "Studies on the electrical, optical and thermal properties of molybdenum trioxide, vanadium pentoxide and titanium dioxide thin films" is the bonafide work carried out by Mr.S. Krishnakumar under my supervision and guidance during 1989-1993 for the award of the degree of Doctor of Philosophy in Physics of the Mahatma Gandhi University and that no part of this work has been presented for any other examination or degree of this or any other university. Also he had passed the Ph.D. qualifying examination of this University held in July 1992.



Dr.C. S. Menon,

Reader in Physics.

Supervising Teacher.

27th December, 1993.

