

Fig 2.1. I.R. spectrum of Dimedone

Fig 2.2.: I.R. spectrum of Bis-(1,3-diketo-5,5-dimethyl-2- cyclo hexyl) -methane.

Fig 2.3.: I.R. spectrum of 3,3,6,6,9-penta methyl-1,2,3,4,5,6,7,8, octahydro-xanthen-1,8-dione.

Fig 2.4.: I.R. spectrum of 3,3,6,6-tetramethyl- 9-(p-hydroxy-m-methoxy phenyl)-1,2,3,4,5,6,7,8,-
octahydro-xanthen-1,8-dione.

Fig 2.5. I.R.: spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl) methyl benzene.

Fig 2.6.: I.R spectrum of 3,3,6,6-tetramethyl-9-phenyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione.

Fig 2.7.: $^1\text{H-NMR}$ spectrum of Dimedone (CDCl_3).

Fig 2.8.: $^1\text{H-NMR}$ spectrum of 3,3,6,6,9-penta methyl-1,2,3,4,5,6,7,8-octahydro-xanthen-1,8-dione (CDCl_3).

Fig 2.9.: $^1\text{H-NMR}$ spectrum of cyclization product of Bis-(1,3-diketo-5,5-dimethyl-2- cyclo hexyl)-ethane (CDCl_3).

Fig 2.10.: $^1\text{H-NMR}$ spectrum of p-(Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-o-methoxy phenol (CDCl_3).

Fig 2.11.: $^1\text{H-NMR}$ spectrum of 3,3,6,6-tetramethyl-9-(p-hydroxy-o-methoxy phenyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione (CDCl_3).

Fig 2.12.: $^1\text{H-NMR}$ spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-methyl-benzene (CDCl_3).

Fig 2.13.: $^1\text{H-NMR}$ spectrum of 3,3,6,6-tetramethyl-9-phenyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione (CDCl_3).

Fig 2.14.: $^1\text{H-NMR}$ spectrum of p-(Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-methyl-N,N-dimethyl Aniline (CD_3COCD_3).

Fig 2.15.: $^1\text{H-NMR}$ spectrum of 3,3,6,6-tetramethyl-9-(p-N,N-dimethyl amino-phenyl)-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione (CD_3COCD_3).

Fig 2.16.: $^1\text{H-NMR}$ spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-ethane (CD_3COCD_3 .)

Fig 2.17.: $^1\text{H-NMR}$ spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-ethane, the common two doublets (CD_3COCD_3).

Fig 2.18.: $^1\text{H-NMR}$ spectrum of 3,3,6,6-tetramethyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione.-9-aldehyde (CDCl_3 .)

Fig 2.19. $^1\text{H-NMR}$ spectrum of 2-Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-furan (CD_3COCD_3).

Fig 2.20.: ^{13}C -NMR spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-methyl-benzene (CD_3COCD_3).

Fig 2.21.: ^{13}C -NMR spectrum of 3,3,6,6-tetramethyl-9-phenyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione (CD_3COCD_3).

Fig 2.22.: ^{13}C -NMR spectrum of 3,3,6,6-tetramethyl-9-(p-hydroxy-m-methoxy phenyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione (CD_3COCD_3 .)

Fig 2.23.: ^{13}C -NMR spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-ethane (CD_3COCD_3).

Fig 2.24.: ^{13}C -NMR spectrum of 3,3,6,6-tetramethyl-9-(p-N,N-dimethyl amino phenyl)-1,2,3,4,5,6,7,8,-
octahydro-xanthen-1,8-dione (CD_3COCD_3 .)

Fig 2.25.: U.V. spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-methane.

Fig 2.26.: U.V. spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-methyl–benzene.

Fig 2.27.: U.V. spectrum of 3,3,6,6-tetramethyl-9-phenyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione.

Fig 2.28.: U.V. spectrum of Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-ethane.

Fig 2.29.: U.V. spectrum of o-Bis-(1,3-diketo-5,5-dimethyl-2-cyclo hexyl)-methyl phenol.

Fig 2.30.: U.V. spectrum of 3,3,6,6-tetramethyl-9-furyl-1,2,3,4,5,6,7,8,-octahydro-xanthen-1,8-dione.