

Supporting Information
A novel, effective, green and recyclable $\alpha\text{-Fe}_2\text{O}_3\text{@MoS}_2\text{@Ni}$ Magnetic nanocatalyst in preparation of a series of 1,2,4-triazolidine-3-thiones and spiro-triazole hybrids

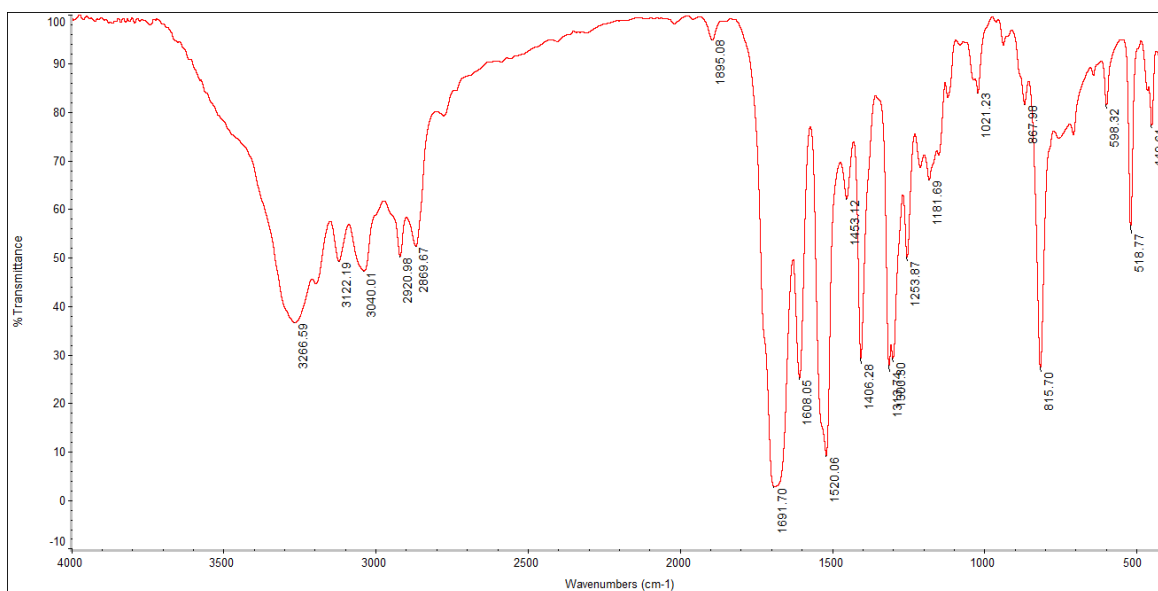
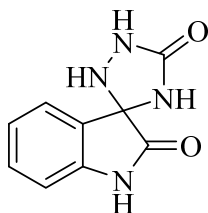
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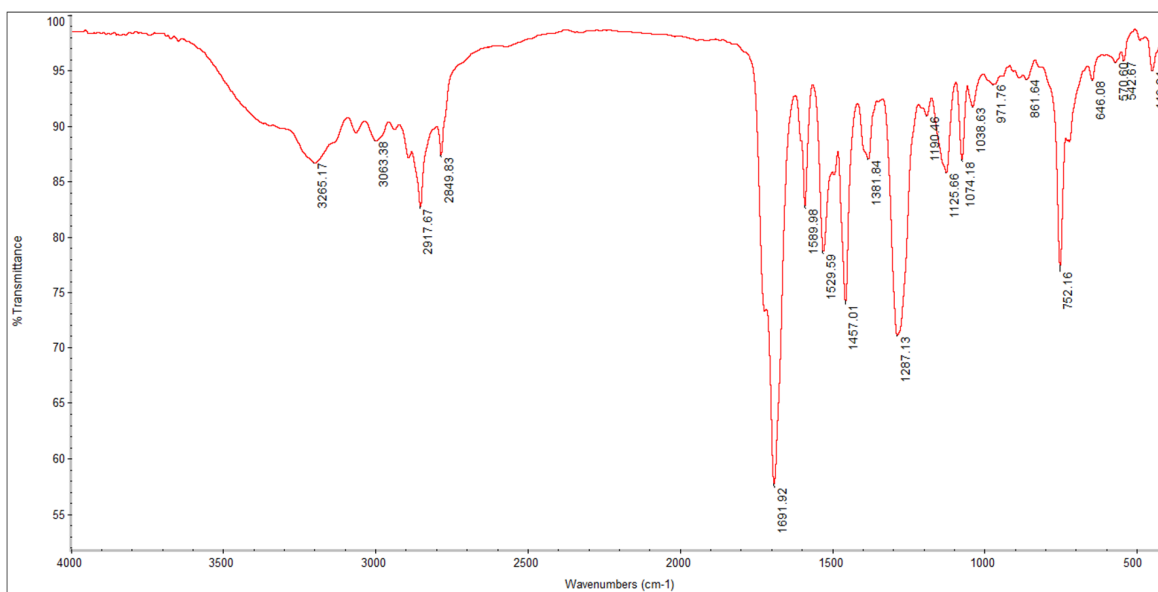
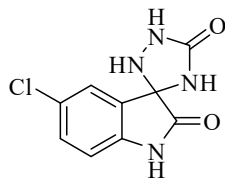
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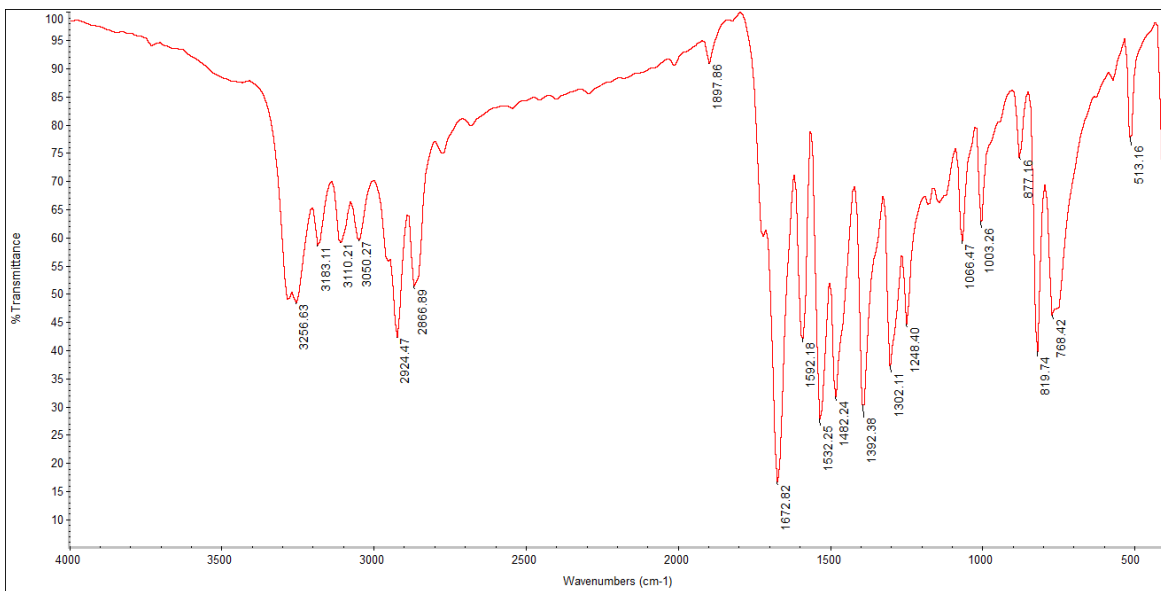
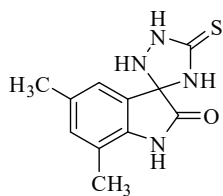
spiro[indoline-3,3'-[1,2,4]triazolidine]-2,5'-dione (3a):



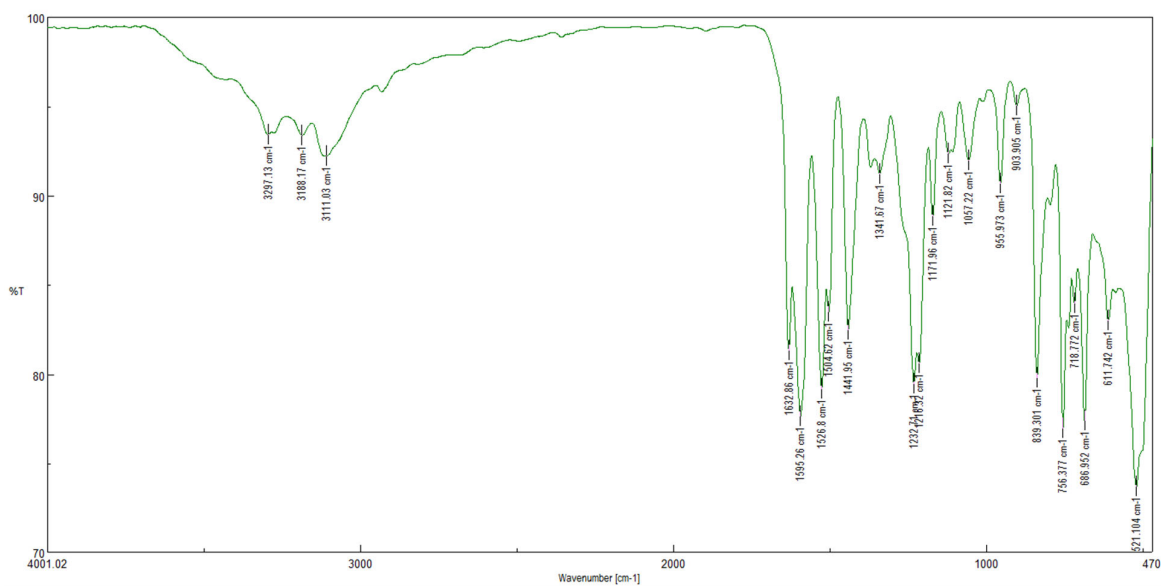
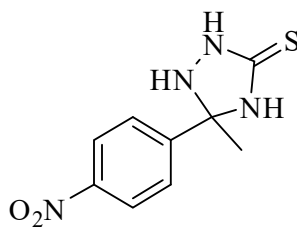
5-chlorospiro[indoline-3,3'-[1,2,4]triazolidine]-2,5'-dione (3c):



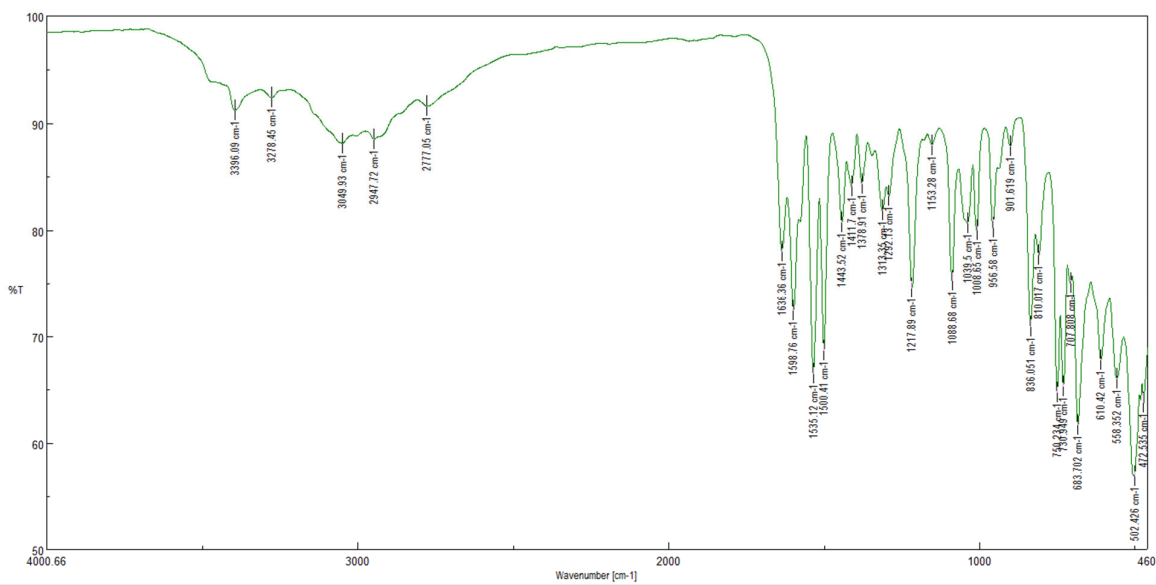
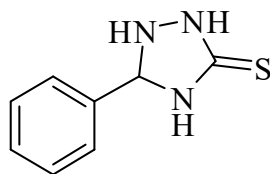
5,7-dimethyl-5'-thioxospiro[indoline-3,3'-[1,2,4]triazolidin]-2-one (3l):



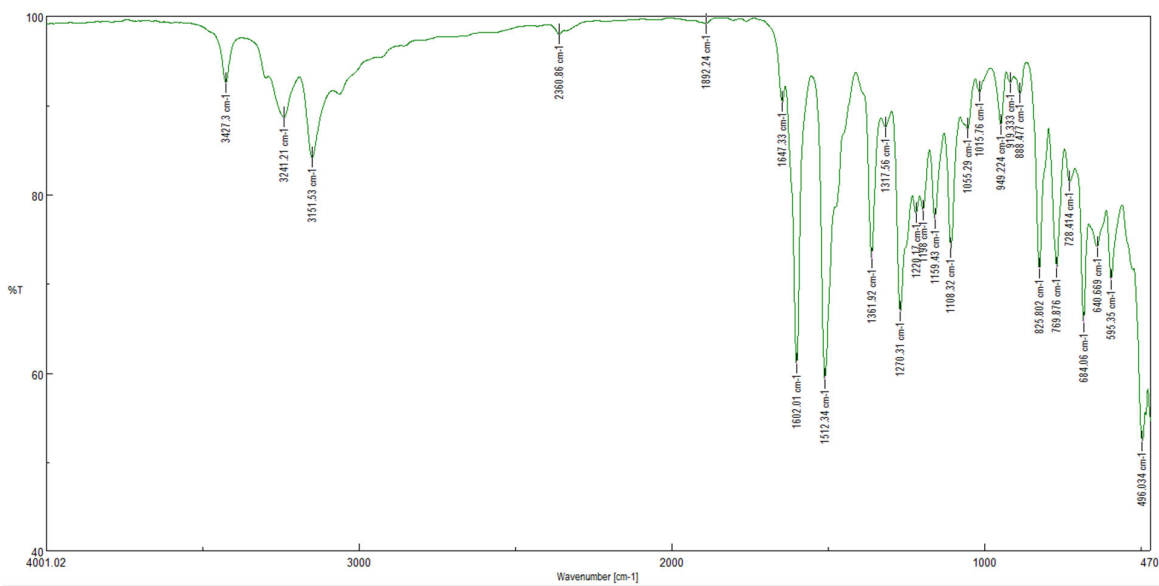
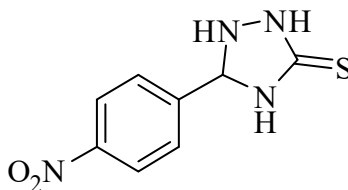
5-methyl-5-(4-nitrophenyl)-1,2,4-triazolidine-3-thione (5d):



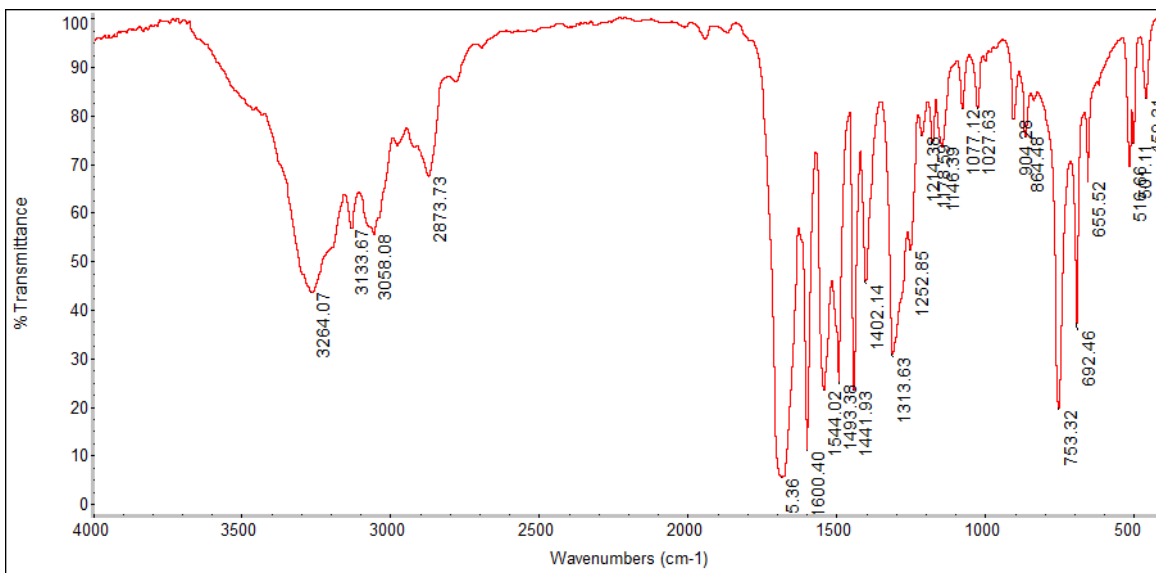
5-phenyl-1,2,4-triazolidine-3-thione (5g):



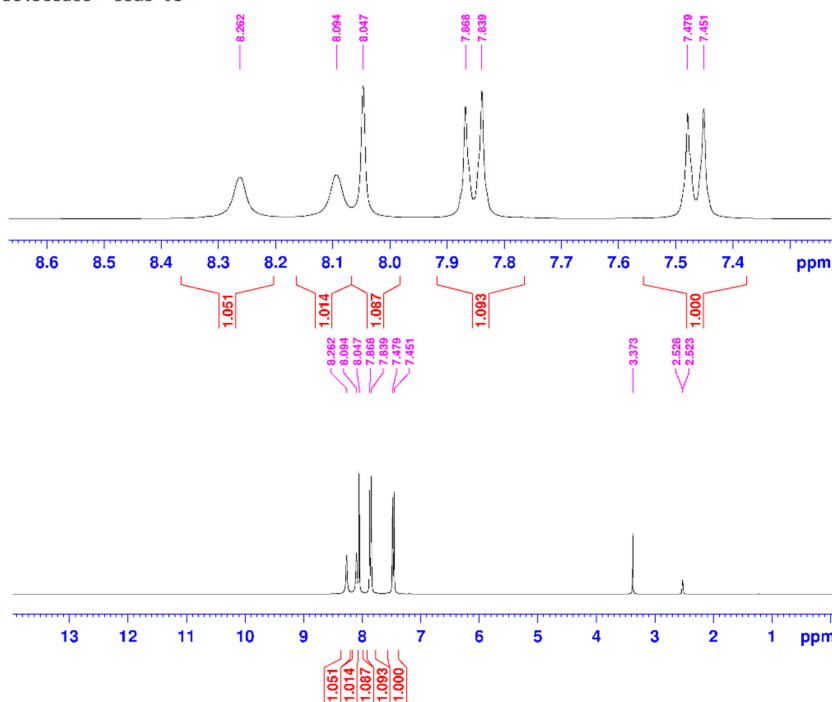
5-(4-nitrophenyl)-1,2,4-triazolidine-3-thione (5j):



5-(5-hydroxyfuran-2-yl)-2,4-dihydro-3H-1,2,4-triazole-3-thione (5k):



Dr.rezaee- code 01 -



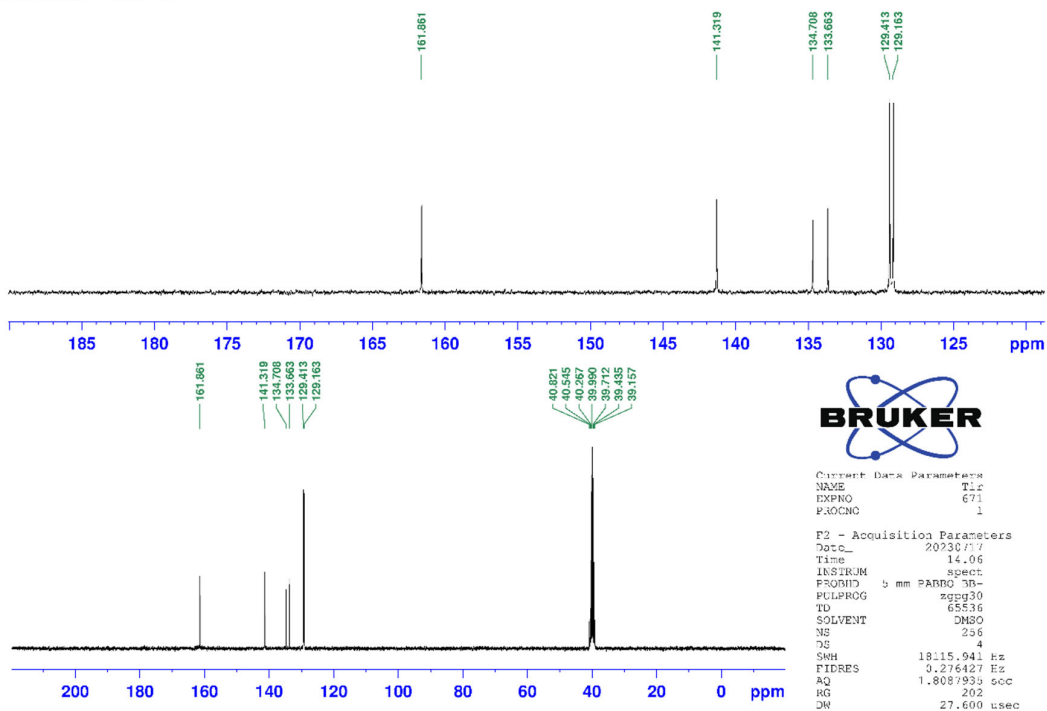
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EXPNO 610
PROCNO -

P2 - Acquisition Parameters
Date_ 20230717
Time 13.49
INSTRUM spec-
PROBHD 5 mm PABBO B3-
PULPROG zg30
TD 12818
SOLVENT DMSO
NS 108
DS 2
SWH 6009.615 Hz
FIDRES 0.500051 Hz
AQ 0.3998978 sec
RG 37.27
DW 83.200 usec
DE 6.50 usec
TR 296.3 K
D1 1.00000000 sec
TD0 -

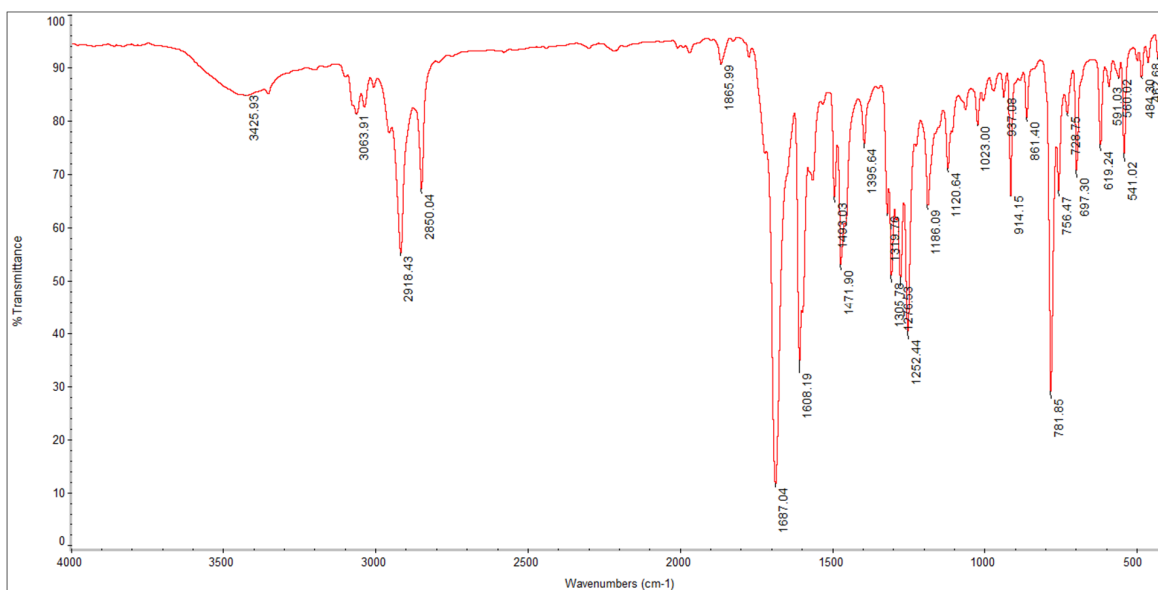
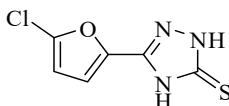
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NUC1 1H
P1 15.00 usec
PIKE1 6.40000010 W

P2 - Processing parameters
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SP 300.800000 MHz
WDW EX
SES 0
LB 0.30 Hz
GB 0
PC 1.00

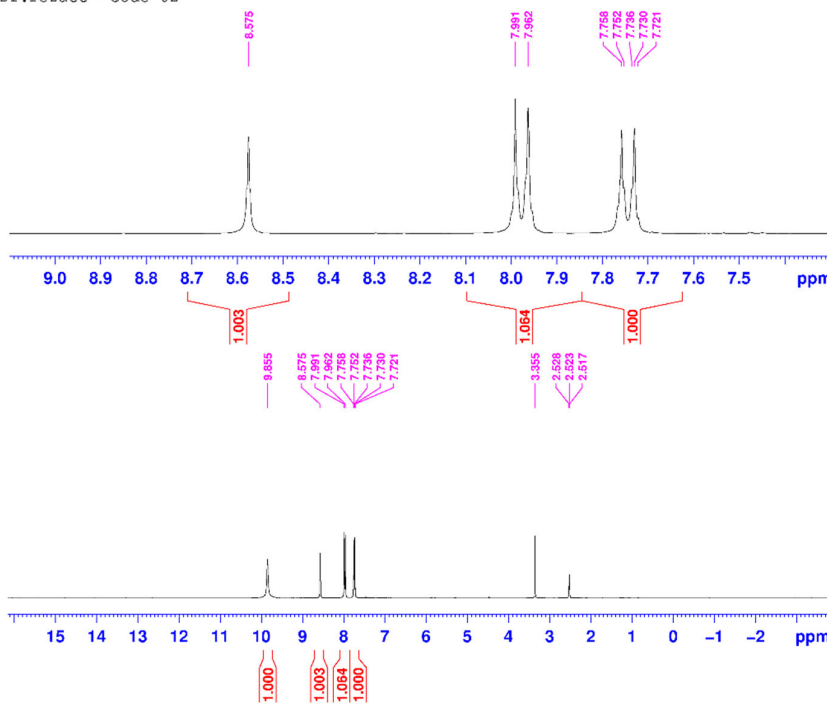
Dr.rezaee- code 01 -



5-(5-chlorofuran-2-yl)-2,4-dihydro-3H-1,2,4-triazole-3-thione (5I):



Dr.rezaee- code 02 -



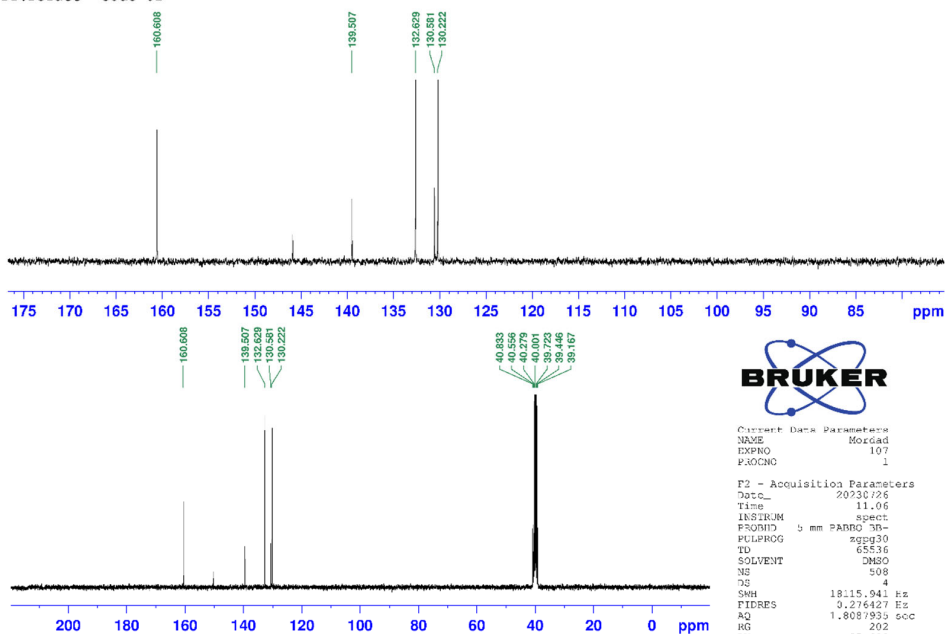
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 NAME Xordad
 EXPNO 106
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20230726
 Time 10.32
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zg30
 TD 12018
 SOLVENT DMSO
 NS 48
 DS 2
 SWH 6009.613 Hz
 FIDRES 0.560055 Hz
 AQ 0.3398978 sec
 RG 202
 DW 83.200 usec
 DE 6.50 usec
 TT 295. K
 D1 1.00600000 sec
 TDO -

----- CHANNEL f1 -----
 SFOL 300.818576 MHz
 NUCL 1H
 P1 15.00 usec
 P1M 6.40000010 W

F2 - Processing parameters
 SI 55538
 SF 300.800000 MHz
 WDN EX
 SSB 0
 TB 0.30 Hz
 GB 0
 PC 1.00

Dr.rezaee- code 02 -



Current Data Parameters
 NAME Xordad
 EXPNO 107
 PROCNO 1

F2 - Acquisition Parameters
 Date_ 20230726
 Time 11.06
 INSTRUM spect
 PROBHD 5 mm PABBO BB-
 PULPROG zgpg30
 TD 65536
 SOLVENT DMSO
 NS 508
 DS 4
 SWH 18115.941 Hz
 FIDRES 0.276427 Hz
 AQ 1.8081939 sec
 RG 202
 DW 27.600 usec

