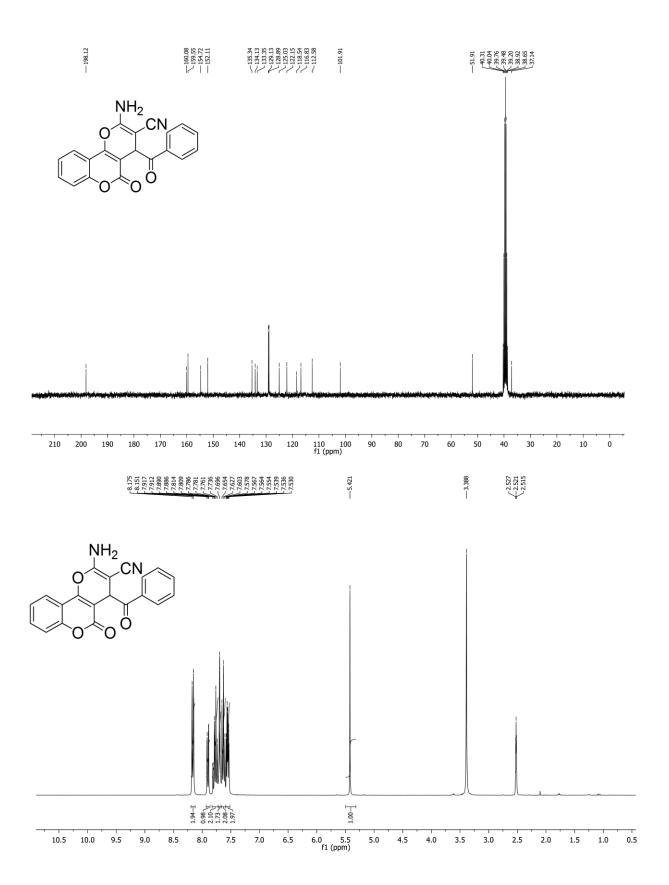
Electronic Supplementary Material (ESI) for New Journal of Chemistry.

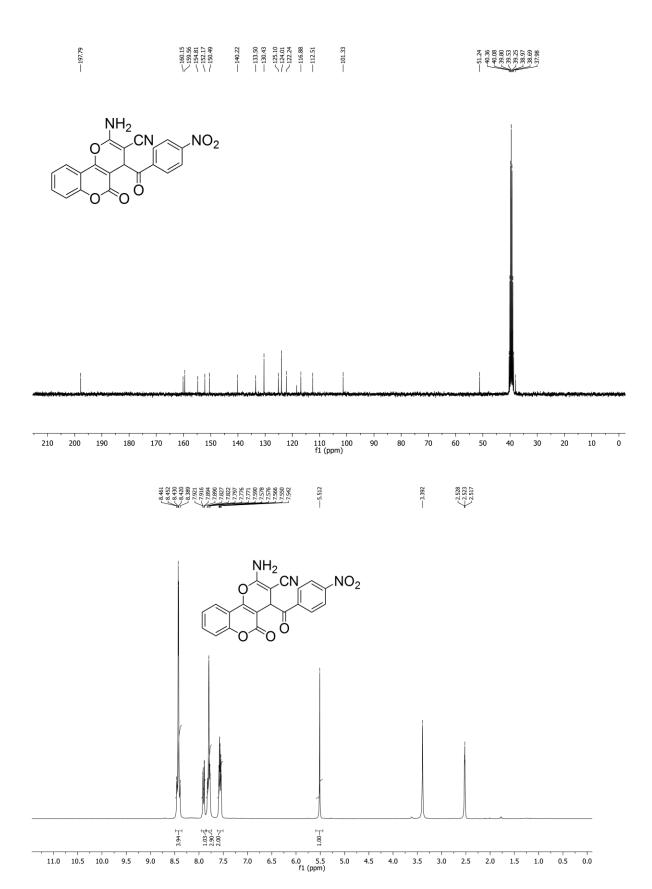
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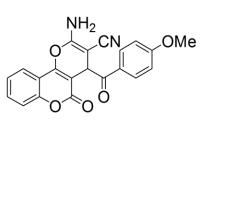
## (Supplementary Data)

## Graphene oxide nanosheets as metal-free catalyst in the threecomponent reactions based on aryl glyoxals to generate novel pyranocoumarins

Saeed Khodabakhshi and Bahador Karami\*

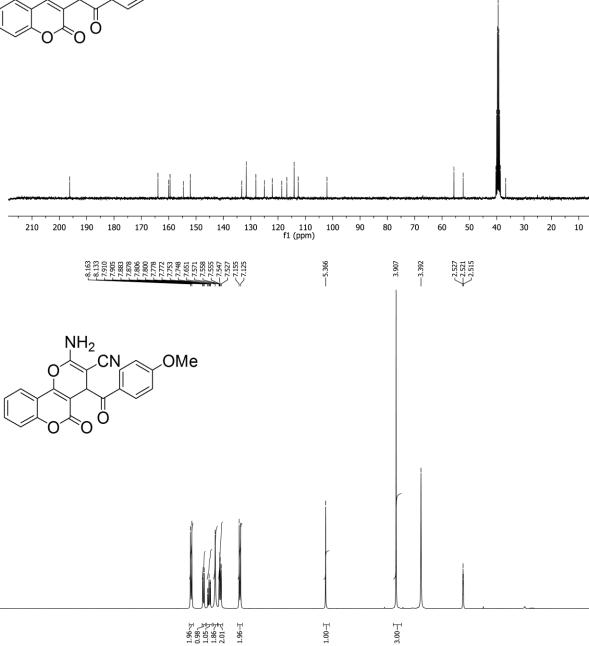




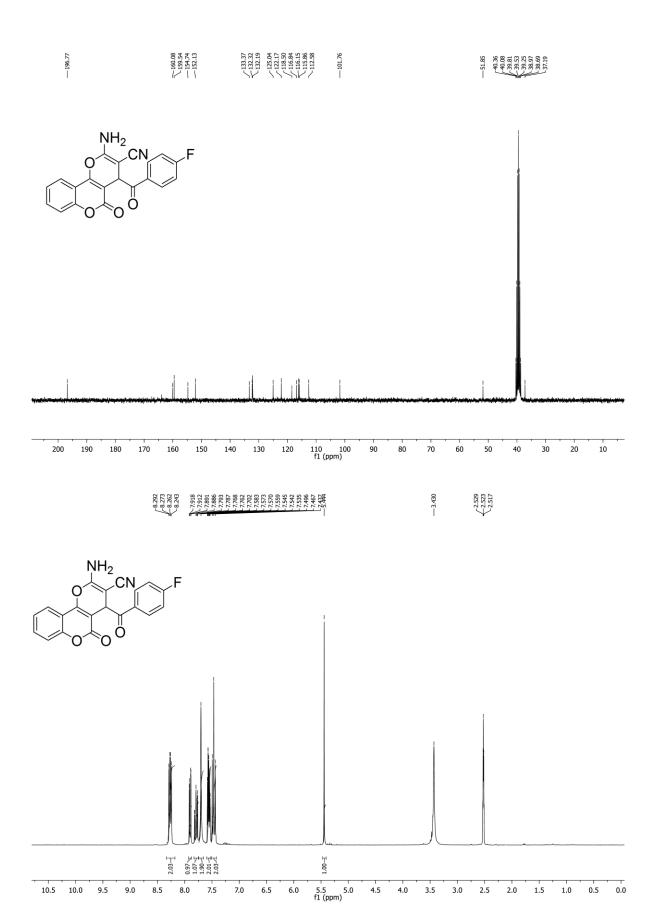


11.5

10.5



9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 f1 (ppm)



10.5 10.0 9.5 9.0

8.5 8.0 7.0

6.5

4.5

4.0

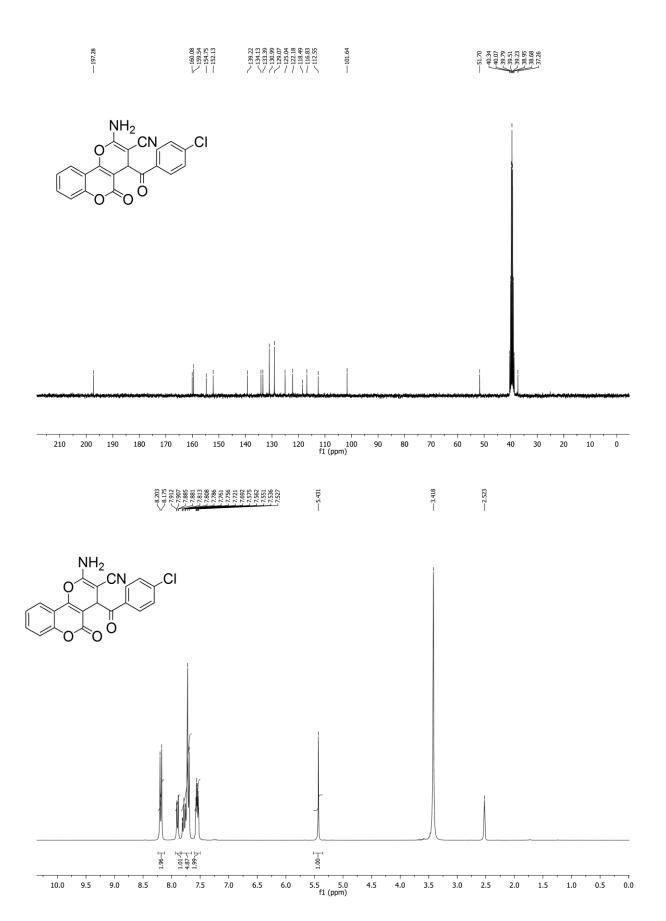
3.5

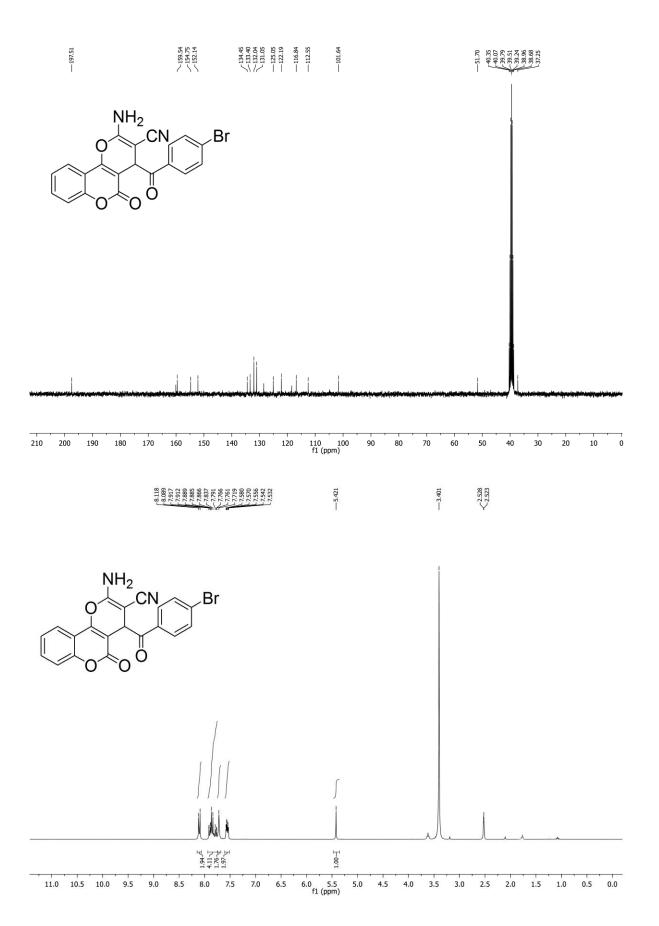
3.0

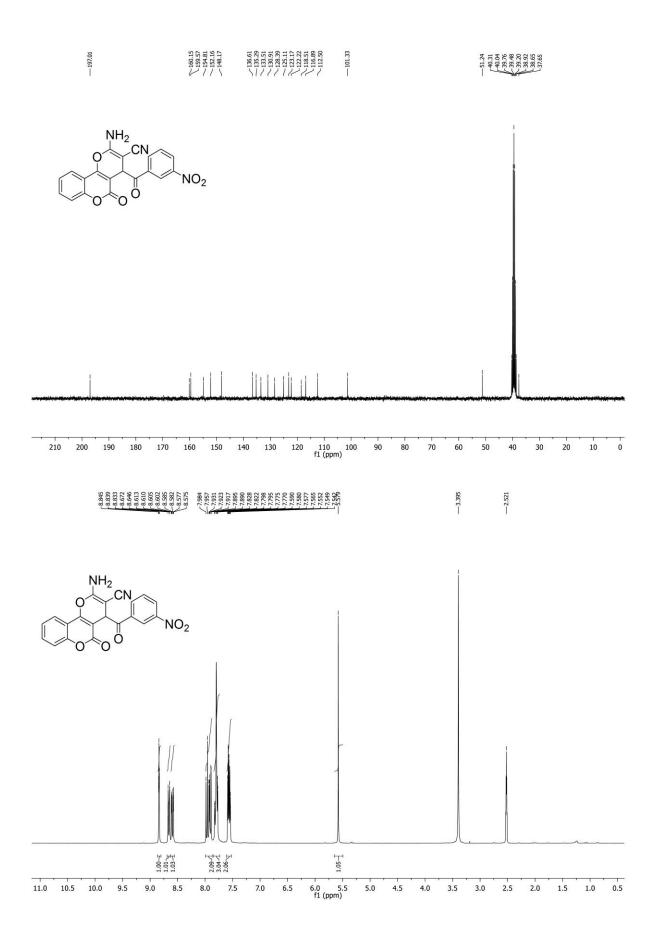
2.5 2.0 1.5

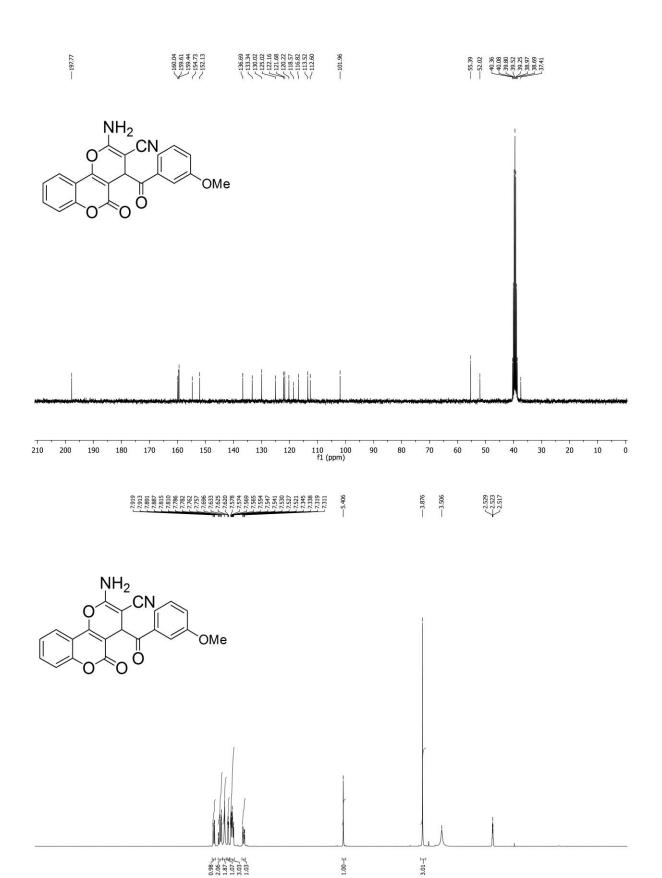
1.0

0.5









6.0 5.5 f1 (ppm)

4.5 4.0

3.5 3.0 2.5

2.0

1.5 1.0

0.5 0.0

6.5

11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0

3.0

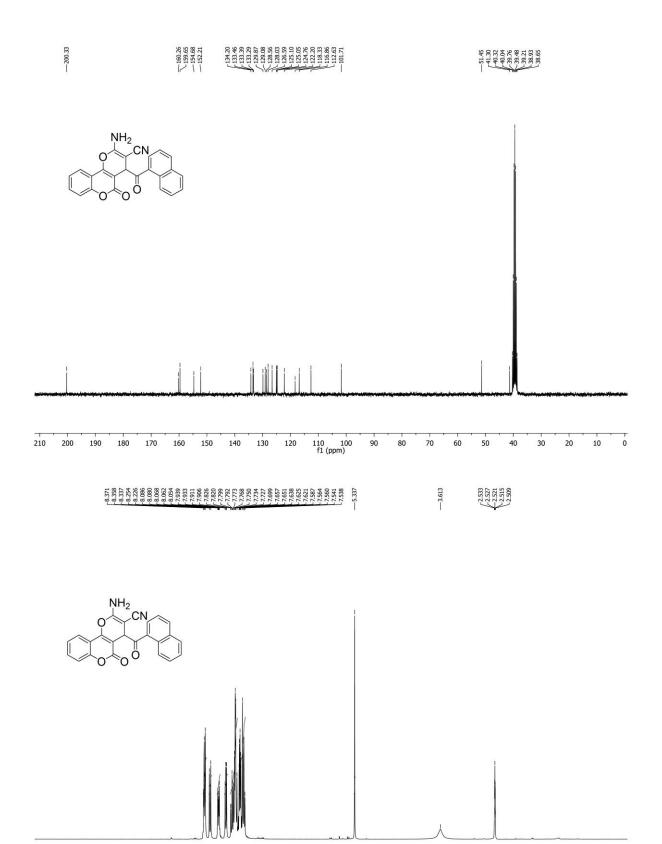
2.5

2.0

10.5

10.0

9.5



6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 f1 (ppm)

11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0