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LIST OF PUBLICATIONS AND CONFERENCES

List of Publications

1. **Pradhan, G** and Sharma, Y.C.,2020. Studies on green synthesis of glycerol carbonate from waste cooking oil derived glycerol over an economically viable NiMgOx heterogeneous solid base catalyst. *Journal of Cleaner Production*, *264*, p.121258

2. **Pradhan, G** and Sharma, Y.C., 2020. Green synthesis of glycerol carbonate by transesterification of bio glycerol with dimethyl carbonate over Mg/ZnO: A highly efficient heterogeneous Catalyst. Fuel, 284, p 118966

3. **Pradhan, G.,** Siddhi Jaiswal**,** Sharma., Y.C.,2021. Enviro-economical benign Synthesis of Glycerol carbonate from biowaste glycerol using Industrial waste pond ash catalyst. Environmental Technology & Innovation**.**236**.** p 101568.

4. **Pradhan, G** and Sharma., Y.C., 2021. Green synthesis of glycerol carbonate from bio waste glycerol using $CaO\text{-}TiO_2$ green Nanoparticles**.** Journal of Cleaner Production, 127860,

5. **Pradhan, G** and Sharma, Y.C., 2021. Study of promotional effect of transition metals (Cr and V) on the catalytic activity of MgO for glycerol carbonate synthesis**.** Applied catalysis A (under review).

6. Jaiswal, S., **Pradhan G.,** Sharma Y.C.,2021. Green and facile synthesis of glycerol carbonate from bio-glycerol assisted by lithium titanate: a robust and selective heterogeneous catalyst, Journal of the Taiwan Institute of Chemical Engineers JTICE-D-21-00899.

7. Sharma, Y.C., Maury, S., **Pradhan, G.,** 2021. A critical review on Biomass to Bio-methanol: A versatile building block for tomorrow: synthesis, process optimization and applications. Energy conversion & Management. (Communicated).

List of Conference Presentations

1. Oral presentation on 26th international conference on Advance in chemistry and Chemical technology, INTERNATIONAL ACADEMY OF PHYSICAL SCIENCES, (CONIAPS XXVI) 18 -20 December 2020. (**Best paper award**)
2. Oral presentation on Biomass and Bioenergy, 21st International conference on Renewable Energy Research, Doon university, Dehradun, 6th October,2020
3. Poster presentation on7*th* International Conference on Advances in Energy Research, IIT Bombay,10 – 12 December 2019 Mumbai, India.
4. Poster Presentation on Value addition of biodiesel biproduct glycerol, April 21 2018, IIT Delhi, India
5. Poster presentation on Biorefinery of Non-edible Oil Seeds for Synthesis of Green Products, IIT BHU, Institute Day, Feb-2018.
6. Workshop on Basic Aspects of NMR Spectroscopy and its Applications, 24 – 26 September, 2018, IISER, Berhampur, India.
7. Poster presentation on National Symposium on Contemporary Trends and Future Prospects of Functional Materials (CTFM-2019, November 2019) BHU, India.
8. Poster presentation on Mass spectrometry organized by Perkin Elmer, 28th Jan,2021 (online mode)

9. Participated in webinar on Renewable Energy Forecasting Trends organized by Chemistry World (RSC),12th Nov,2020.

10. Participated in webinar on How Industry is Driving Sustainability through Innovation organized by ACS ,12th May ,2020

APPENDIX

Using tert-butanol as solvent, retention time of glycerol carbonate was found to be 16.5 min as shown in fig D_1 when there is complete conversion of glycerol-to-glycerol carbonate. Generally, the standard gas chromatogram curve of glycerol carbonate lies in the range of 14.90 to 16.50 min retention time as shown in fig D_2. From fig D_2 it was observed that the retention time of glycerol was 5.53 min. The GC-MS chromatogram of glycerol carbonate was given in fig D_3. The relative abundance of different fragmentation patterns of glycerol carbonate compound had different m/z values. The peak at m/z 118 corresponds to molecular ion peak of synthesized glycerol carbonate with relative abundance of <5% . The peak at m/z 88 with 99% abundance corresponds to base peak of glycerol carbonate. Besides these there are also many others peaks which shows the fragmentation pattern of synthesized glycerol carbonate in GC-MS spectra analysis.

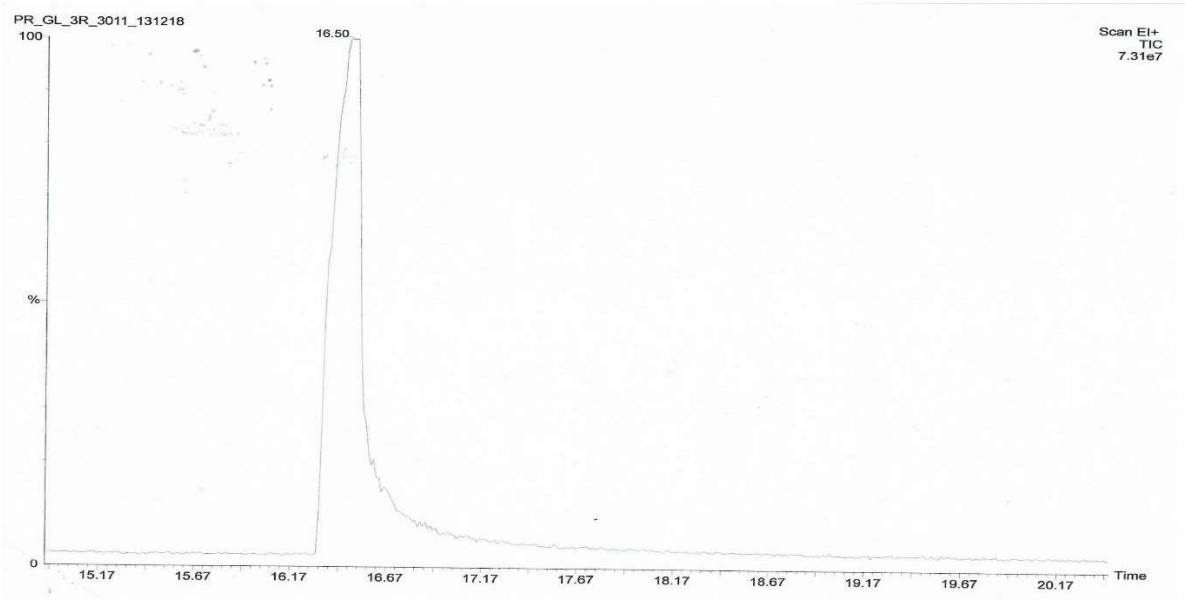


Fig D_1. Gas chromatogram of synthesized glycerol carbonate.

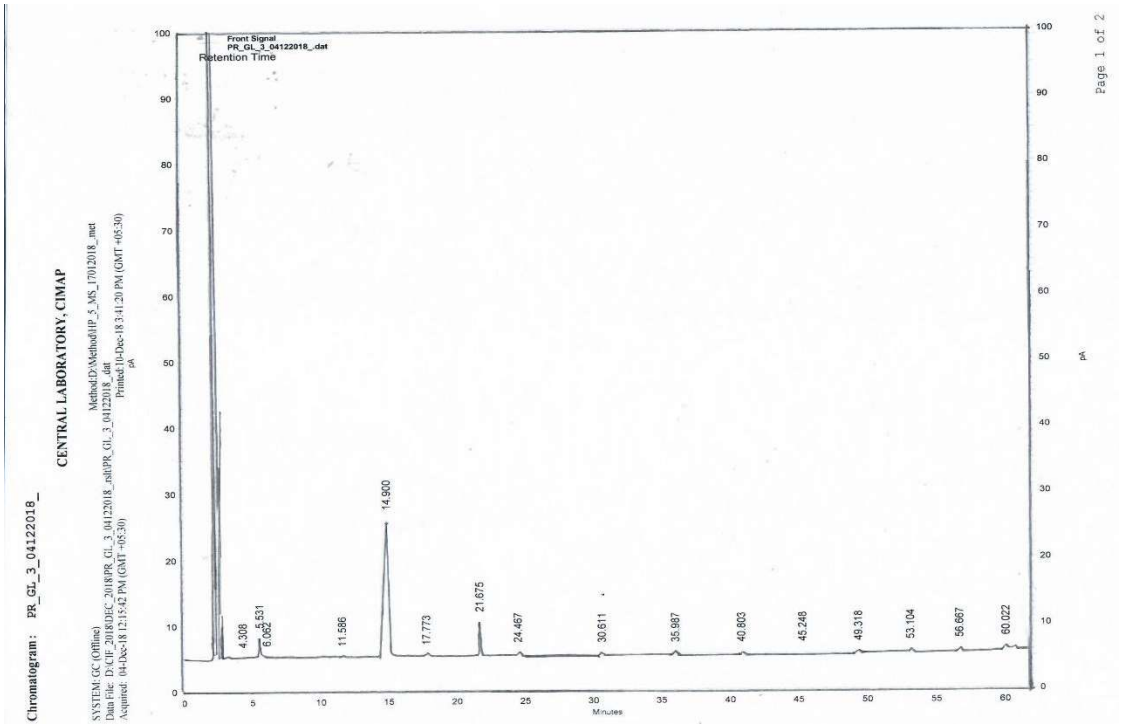
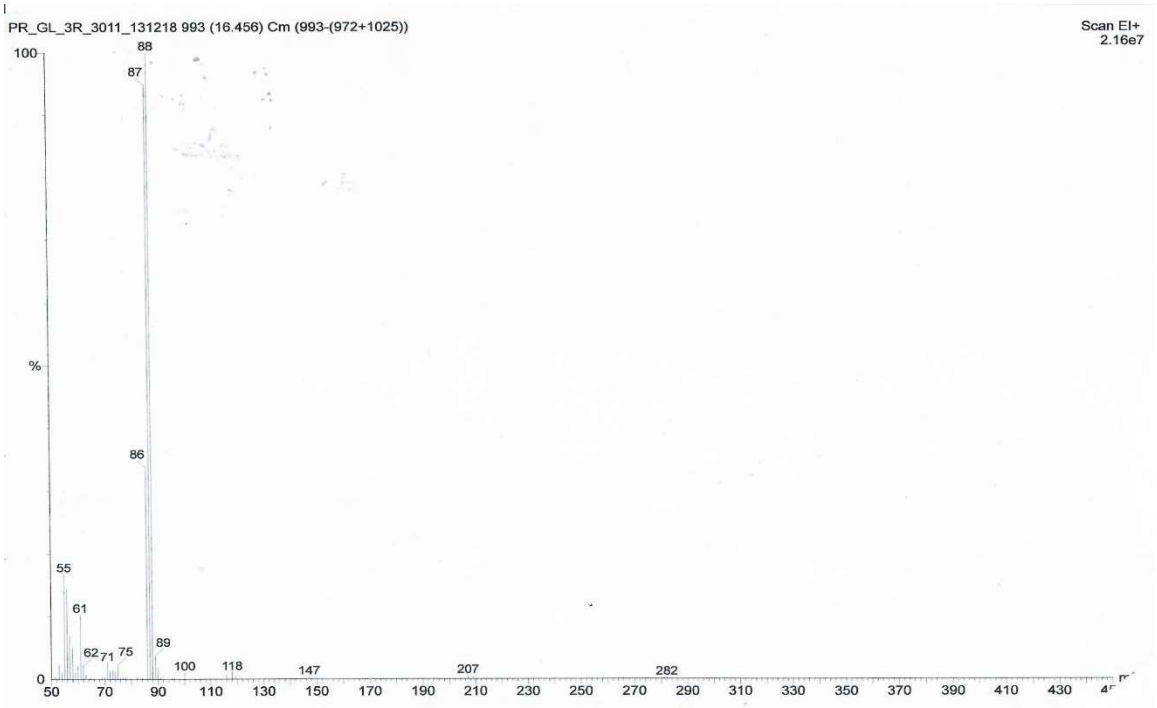


Fig D_2. Gas chromatogram of uncompleted transesterification reaction of glycerol.



GC-MS (relative intensity, 70eV) *m/z*: 118 (M+, < <5%), 88 (99), 87 (92), 86 (52), 75 (5), 71 (5), 62 (8), 61 (15), 55(12).

Fig D_3**.** GC-MS chromatogram of glycerol carbonate.