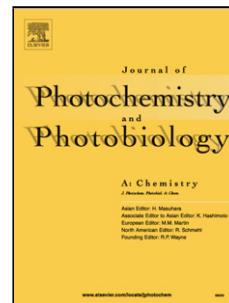


Accepted Manuscript

Title: PHOTOCHEMISTRY AND
PHOTOPOLYMERISATION OF SUBSTITUTED
2-METHYLANTHRAQUINONES AND NOVEL
2-ACRYLOXYMETHYLANTHRAQUINONE IN
RADIATION CURING



Authors: Norman S. Allen, Hazira Hamzah, Michele Edge,
Chris. M. Liauw, Fernando Catalina, Ruth Edge, Suppiah
Navaratnam

PII: S1010-6030(17)31743-4
DOI: <https://doi.org/10.1016/j.jphotochem.2018.01.006>
Reference: JPC 11094

To appear in: *Journal of Photochemistry and Photobiology A: Chemistry*

Received date: 27-11-2017
Revised date: 3-1-2018
Accepted date: 3-1-2018

Please cite this article as: Norman S.Allen, Hazira Hamzah, Michele Edge, Chris.M.Liauw, Fernando Catalina, Ruth Edge, Suppiah Navaratnam, PHOTOCHEMISTRY AND PHOTOPOLYMERISATION OF SUBSTITUTED 2-METHYLANTHRAQUINONES AND NOVEL 2-ACRYLOXYMETHYLANTHRAQUINONE IN RADIATION CURING, Journal of Photochemistry and Photobiology A: Chemistry <https://doi.org/10.1016/j.jphotochem.2018.01.006>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

PHOTOCHEMISTRY AND PHOTOPOLYMERISATION OF SUBSTITUTED 2-METHYLANTHRAQUINONES AND NOVEL 2-ACRYLOXYMETHYLANTHRAQUINONE IN RADIATION CURING

Norman S. Allen*, Hazira Hamzah, Michele Edge and Chris. M. Liauw
Chemistry and Environmental Sciences Department
Faculty of Science and Engineering
The Manchester Metropolitan University
Chester Street, Manchester M1 5GD, UK

Fernando Catalina
Departamento de Quimica Macromolecular Aplicada
Instituto de Ciencia y Tecnologia de Polimeros (CSIC)
C/Juan De La Cierva, 3, 28006, Madrid, Spain
(Fcatalina@ictp.csic.es)

Ruth Edge
Dalton Cumbrian Facility
University of Manchester, West lake Science and Technology Park, Moor Row, Whitehaven,
CA24 3HA, UK
(Ruth.edge@manchester.ac.uk)

Suppiah Navaratnam
Biomedical Sciences Research Institute, University of Salford, Manchester, UK
(e-mail: navaratnam1000@gmail.com)

*Contact: Norman_Allen@sky.com (Emeritus Professor)

HIGHLIGHTS

Core elements

- Characterise the spectroscopic properties of a range of 2-substituted methylantraquinones.
- Synthesis and characterisation of a novel acryloxyderivative of 2-methyleneanthraquinone.
- Characterise the excited state properties of the anthraquinones through detailed micro and nano-second flash and laser photolysis studies.
- Inter-relate their structure and excited state properties with their activity as photopolymerisation initiators.
- The nature of the anthraquinone lowest excited states and intersystem crossing rates were determined and found to play a vital role in controlling activity.

Essential Results and Conclusions

- The article involves detailed investigations into the photophysical, photochemistry and photopolymerisation properties of 4 commercial derivatives of 2-substituted anthraquinone, namely, 2-Bromomethylantraquinone (2BA), 2 Chloromethylantraquinone (2CA), 2 Ethylantraquinone (2EA), 2 Hydroxymethylantraquinone (2HA) and one novel synthesized anthraquinone, 2 Acryloxymethylantraquinone (2AA).

Download English Version:

<https://daneshyari.com/en/article/6492687>

Download Persian Version:

<https://daneshyari.com/article/6492687>

[Daneshyari.com](https://daneshyari.com)