

## ***Interactive comment on “Utilising polyphenylene oxide for high exposure solar UVA dosimetry” by D. J. Turnbull and P. W. Schouten***

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The first line of the abstract has been changed to the following: A personal UV dosimeter that can quantitatively assess high exposure solar UVA exposures has been developed. The first paragraph of the Introduction has been changed to include the following: Skin cancer is Australia's most expensive cancer with estimated amounts of \$264 million and \$30 million spent in Australia during 2001 on NMSC and melanoma respectively (AIHW, 2005). The following has been added to page 2, line 33: Spectroradiometers, broadband meters and dosimeters are often utilised for the measurement of incident solar UV radiation. Dosimetry is very useful as researchers can leave the dosimeters in situ for extended periods of time to monitor long term UV trends. However, dosimeters need to be calibrated against a spectroradiometer or broadband meter. On the other hand, spectroradiometers and broadband meters are more useful

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for analysing the effect of changing atmospheric variables (e.g. clouds, aerosols and ozone) upon UV dosages. Page 3, line 4 now reads: "would allow for unattended UVB measurements to be made at various locations over a time period of at least one week with high levels of accuracy"; The word size has been replaced with area. The following has been added to page 3, section 2.2: One dosimeter was removed from solar exposure at regular periods of time ranging from one to two days with the last dosimeter being removed after 22 days. The following has been added to page 4, section 2.2: "from 280 to 400 nm"; Also, the following has been added to page 3, section 2.2: The dosimeters were brought in at the end of each day to ensure that they did not receive any overnight damage. The following has been added to page 4, section 2.3: These exposures were conducted on an unshaded sports oval in autumn under clear sky conditions to ensure that the dosimeters were exposed to all of the incident solar UV radiation, both direct and diffuse radiation from the sky. The following has been removed from the first sentence of page 5, section 3.3 to reduce repetition of details: "ten dosimeters were placed on a horizontal plane and exposed to solar UV. The last sentence of section 3.3 now reads: This variation may be due to minor variations over the surface of the sheet of PPO film, from which the dosimeters were fabricated, that are inherent in the casting process and are difficult to eliminate. Variation can also be influenced by dust particles that may have accumulated on the surface of the dosimeters during the exposure period. The following has been added to page 5, section 4: For the Toowoomba measurement site, this equates to approximately two weeks of full day UVA exposures under clear sky conditions. This exposure period will be extended for higher latitudes sites and also for varying atmospheric conditions.

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