

**LEMBAR  
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW  
KARYA ILMIAH : JURNAL ILMIAH**

Judul Jurnal Ilmiah (Artikel) : Development of a head CT dose index (CTDI) phantom based on polyester resin and methyl ethyl ketone peroxide (MEKP) a preliminary study

Nama/ Jumlah Penulis : 6 Orang

Status Pengusul : ~~Penulis pertama/ Penulis ke- /~~ Penulis Korespondensi \*\*

Identitas Jurnal Ilmiah : a. Nama Jurnal : Journal of Radiological Protection  
 b. Nomor ISSN : 0952-4746, eISSN : 1361-6498  
 c. Vol, No., Bln Thn : Vol 40 No 2, Juni 2020 Hal 544-553  
 d. Penerbit : IOP Publishing Ltd.  
 e. DOI artikel (jika ada) : 10.1088/1361-6498/ab81a6  
 f. Alamat web jurnal : <https://iopscience.iop.org/article/10.1088/1361-6498/ab81a6>  
 Alamat Artikel : berbayar  
 g. Terindex : Scopus (Q3, SJR 0,44)

Kategori Publikasi Jurnal Ilmiah :  Jurnal Ilmiah Internasional/Internasional Bereputasi  
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c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	11,90	11,00	11,45
d. Kelengkapan unsur dan kualitas penerbit (30%)	11,90	12,00	11,95
<b>Total = (100%)</b>			<b>38,90</b>
<b>Nilai untuk Pengusul : 40% x 38,90 = 15,56</b>			

Semarang, 8 Maret 2023

Reviewer 1

Reviewer 2



Prof. Dr. Rahmat Gernowo, M.Si  
 NIP. 196511231994031003  
 Unit Kerja: FSM Universitas Diponegoro  
 Bidang Ilmu: Fisika



Prof. Dr. Kusworo Adi, S.Si., M.T.  
 NIP. 197203171998021001  
 Unit Kerja: FSM Universitas Diponegoro  
 Bidang Ilmu: Fisika

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<b>Nilai Pengusul = 40% x 39,8 = 15,92</b>				

**Catatan Penilaian artikel oleh Reviewer :**

**1. Kelengkapan unsur isi jurnal:**

Artikel telah ditulis sesuai dengan standar **Journal of Radiological Protection**, sebuah jurnal Scopus Q3, SJR 0,33 Latar belakang memberikan dasar yang sangat kuat untuk mengemukakan sesuatu yang baru dalam artikel. . Kebaruan dari kajian ini dikemukakan dengan baik dan jelas.

**2. Ruang lingkup dan kedalaman pembahasan:**

Pembahasan dengan menggunakan metoda yang diusulkan dalam artikel cukup komprehensif. Diskusi telah dilakukan dengan para peneliti lain melalui referensi yang disitasi. Sebuah artikel yang menarik.

**3. Kecukupan dan kemutakhiran data/informasi dan metodologi:**

Data dan referensi mutakhir, termasuk referensi dari kajian yang dilakukan oleh peneliti. Metoda standar dibidangnya dan akan bisa direfleksikan oleh peneliti lain sebidang.

**4. Kelengkapan unsur dan kualitas terbitan:**

Penerbitan sudah sangat bagus tertata rapi **Journal of Radiological Protection**, sebuah jurnal Scopus Q3, SJR 0,33, , nilai maksimum 40

Semarang, 1 Maret 2023  
Reviewer 1

Prof. Dr. Drs. Rahmat Gernowo, M.Si.  
NIP. 196511231994031003  
Unit Kerja : Fisika  
Bidang Ilmu: Fakultas Sains dan Matematika



**LEMBAR  
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d. Kelengkapan unsur dan kualitas terbitan/jurnal (30%)	12			12,00
<b>Total = (100%)</b>	<b>40</b>			<b>38,00</b>
<b>Nilai Pengusul = 40% x 38,00 = 15,20</b>				

**Catatan Penilaian artikel oleh Reviewer :**

- 1. Kelengkapan unsur isi jurnal:** Penulisan artikel sudah baik dan mengikuti standard penulisan artikel di jurnal, yaitu Abstract, Introduction, Materials and Method, Result and Discussion, Conclusions, Acknowledgement and References. Substansi artikel sesuai bidang ilmu pengusul.
- 2. Ruang lingkup dan kedalaman pembahasan:** Lingkup bahasan dari artikel ini adalah bidang fisika. Pembahasan cukup baik yaitu mengembangkan phantom untuk pengukuran indeks dosis tomografi terkomputasi (CTDI) berdasarkan resin poliester yang dicampur dengan metil etil keton peroksida (MEKP) sebagai katalis. Nomor CT dan nilai CTDI dari phantom resin poliester dibandingkan dengan phantom polymethyl methacrylate (PMMA) standar sebagai referensi. Kedalaman pembahasan baik.
- 3. Kecukupan dan kemutakhiran data/informasi dan metodologi:** Informasi yang disajikan cukup baru dan hasil yang diperoleh memuat substansi orisinal dengan aspek aplikasi yang penting. Sumber gagasan penulis untuk artikel ini banyak dan komprehensif. Dari 29 referensi yang dipakai terdapat 5 paper yang lebih dari 10 tahun terakhir (out of date). Metodologinya baik dan penulisannya terstruktur.
- 4. Kelengkapan unsur dan kualitas terbitan:** Artikel dimuat di Journal of Radiological Protection, pada Vol 40 No 2, Juni 2020 Hal 544-553. Diterbitkan oleh IOP Publishing Ltd.. Journal terindeks Scopus (Q3, SJR 0,44).

Semarang, 1 Maret 2023  
Reviewer 2



Prof. Dr. Kusworo Adi, S.Si., M.T.  
NIP. 197203171998021001  
Bidang Ilmu: Fisika  
Unit Kerja: Fakultas Sains dan Matematika



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# Development of a head CT dose index (CTDI) phantom based on polyester resin and methyl ethyl ketone peroxide (MEKP): A preliminary study

[Hilmawati, Rumaisya<sup>a</sup>](#); [Sutanto, Heri<sup>a</sup>](#) ; [Anam, Choirul<sup>a</sup>](#); [Arifin, Zaenal<sup>a</sup>](#); [Asiah, Rin Hafsatul<sup>a</sup>](#); [Soedarsono, Johnny Wahyuadi<sup>b</sup>](#)



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<sup>a</sup> Department of Physics, Faculty of Sciences and Mathematics, Diponegoro University, Jl. Prof. Soedarto SH, Tembalang, Semarang, Central Java, 50275, Indonesia

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Dio, P. , Anam, C. , Hidayanto, E. (2022) *Radiation Physics and Chemistry*

Development of In-House Head Computed Tomography Dose Index Phantoms Based on Polyester-Resin Materials

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Fahmi, A. , Anam, C. , Suryono (2020) *Radiation Protection Dosimetry*

Identification of the computed tomography dose index for tube voltage variations in a polyester-resin phantom

Fatichah, L.N. , Anam, C. , Sutanto, H.

## Abstract

This paper aims to develop phantoms for measurement of computed tomography dose index (CTDI)

based on a polyester resin mixed with methyl ethyl ketone peroxide (MEKP) as catalyst. CT number and CTDI values of the polyester resin phantoms were compared with a standard polymethyl methacrylate (PMMA) phantom as reference. The percentage of MEKP was varied from 0.3 to 0.6 wt%. The polyester resin phantoms had diameter of 160 mm, length of 150 mm and five cylindrical holes with diameter of 13.5 mm. One hole was positioned at the centre of the phantom and the other four near its periphery, 10 mm from the edge. The results show that the CT number of the polyester resin phantom was about 1%–5% higher than that of the standard PMMA phantom. Among the polyester resin phantoms, the one with 0.3 wt% MEKP is closest to the standard PMMA phantom in terms of CT number. In addition, the difference in weighted CTDI value between the 0.3 wt% polyester resin phantom and the PMMA is less than 5%. Thus, the 0.3 wt% polyester resin is potentially used as an alternative to the standard PMMA, with the advantage of a lower cost. © 2020 Society for Radiological Protection. Published on behalf of SRP by IOP Publishing Limited. All rights reserved.

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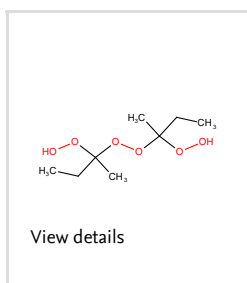
Author keywords

CT dose index; development; methyl ethyl ketone peroxide; phantom; polyester; resin

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doi: 10.1093/rpd/ncw326

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## PAPER

# Estimation of absorbed gamma dose rate from granite by Monte Carlo simulation approach

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## PAPER

# Relationship between indoor ambient dose equivalent rates and the architectural style of standalone houses in locations with high naturally occurring radionuclide soil concentrations

J A Corbacho<sup>1,2</sup> , J García-Paniagua<sup>1</sup> , A Baeza<sup>1</sup> and J Guillén<sup>1</sup> 

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