C-1

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

| | | | |
|---|---|---|---|
| Judul Artikel Ilmiah | : | Surface modification of TiO2 for visible light photocatalysis: Experimental and theoretical calculations of its electronic and optical properties | |
| Penulis Artikel Ilmiah | : | **Dessy Ariyanti**, Surayya Mukhtar, Nisar Ahmed, Zhuofeng Liu, Junzhe Dong, Wei Gao | |
| Status Pengusul | : | Penulis utama | |
| Identitas Jurnal Ilmiah | : | a. Nama Jurnal | : International Journal of Modern Physics B |
| | | b. ISSN | : print: 0217-9792,online: 1793-6578 |
| | | c. Nomor/Volume/Hal | : 1-3/34/1-8 |
| | | d. Edisi (bulan/tahun) | : 2020 |
| | | e. Penerbit | : World Scientific Publishing Co. Pte Ltd |
| | | f. Jumlah halaman | : 8 halaman |
| | | g. DOI artikel (Jika ada) | : https://doi.org/10.1142/S0217979220400676 |
| | | h. Alamat web Jurnal | : https://www.worldscientific.com/doi/epdf/10.1142/S0217979220400676 |
| | | i. Terindeks di | : SCOPUS (Q4) SJR 0,24 |
| | | j. Turnitin | : https://doc-pak.undip.ac.id/13907/4/Turnitin-C2.pdf |

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- [ ] Jurnal Ilmiah Nasional Terakreditasi
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| d. | Kelengkapan unsur dan kualitas penerbit (30%) | 10,50 | 9,00 | 9,75 |
| Nilai Total = (100%) | | **35,50** | **34,00** | **34,75** |
| Nilai pengusul = (0,6 x nilai total) | | **21,3** | **20,40** | **20,85** |

Semarang,

Penilai 1

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NIP 197405231998021001
Unit kerja : Teknik Kimia FT Undip

Penilai 2

Prof. Dr. Ir. Hadiyanto, S.T., M.Sc., IPU
NIP 197510281999031004
Unit kerja : Teknik Kimia FT Undip

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- [ ] Jurnal Ilmiah Nasional tidak Terakreditasi

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| d. Kelengkapan unsur dan kualitas penerbit (30%) | **12** | | | 10,50 |
| Nilai Total = (100%) | **40** | | | **35,50** |
| Nilai pengusul = | | | **60% x 35,5** | **21,30** |

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| | | |
|---|---|---|
| Kelengkapan dan Kesesuaian Unsur | : | Artikel ini mencakup judul, abstrak, metode percobaan, hasil dan pembahasan, kesimpulan, ucapan terima kasih dan daftar putaka. |
| Ruang Lingkup dan Kedalaman Pembahasan | : | Isi artikel masih dalam ruang lingkup jurnal International Journal of Modern Physics B yang meliputi percobaan memodifikasi katalis TiO2 dan uji sifat kelistrikan dan optiknya. Hasil percobaan dibahas dengan cukup jelas dan didukung dengan pustaka yang memadai atau sekitar 59% dari pustaka yang digunakan. |
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| Kelengkapan Unsur dan Kualitas Penerbit | : | Journal ini tergolong dalam jurnal internasional bereputasi Q4 dengan SJR 0.240 dan H index 77 pada pemeringkatan jurnal Scimago tahun 2020. Editorial board berasal dari berbagai negara, terdapat pedoman penulisan yang jelas dan format penulisan konsisten. Pada umumnya, artikel yang disajikan merupakan hasil karya penulis dari berbagai negara Asia Tenggara. Penerbit jurnal ini adalah World Scientific Publishing Co. Pte Ltd-Singapore. Gaya selingkung yang diterapkan jurnal ini cukup baik. Akan tetapi, dari 11 artikel yg terbit pada volume tsb, sebanyak 6 artikel ditulis oleh penulis dari Indonesia. |

Semarang, 29 Oktober 2022
Penilai 1

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NIP 197405231998021001
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Bidang Ilmu : Teknik Kimia
Jabatan/Pangkat : Guru Besar

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| | | Internasional | Nasional Terakreditasi | Nasional tidak Terakreditasi | |
| | | **40** | | | |
| a. | Kelengkapan dan Kesesuaian unsur isi artikel (10%) | **4** | | | 4,0 |
| b. | Ruang lingkup dan kedalaman pembahasan (30%) | **12** | | | 11,0 |
| c | Kecukupan dan kemutahiran data/informasi dan metodologi (30%) | **12** | | | 10,0 |
| d. | Kelengkapan unsur dan kualitas penerbit (30%) | **12** | | | 9,0 |
| Nilai Total = (100%) | | **40** | | | **34,0** |
| Nilai pengusul = | | | | **60% x 34** | **20,4** |

**KOMENTAR/ULASAN PEER REVIEW**

| | | |
|---|---|---|
| Kelengkapan dan Kesesuaian Unsur | : | Kelengkapan unsur artikel sudah memenuhi, unsur sudah lengkap dari abstract, introduction, experimental details, results and discussion, conclusion dan reference. Tingkat plagiarisme sebesar 12%. |
| Ruang Lingkup dan Kedalaman Pembahasan | : | Pembahasan cukup mendalam dengan menggunakan 17 referensi yang mendukung. Artikel ini termasuk dalam ruang lingkup teknik kimia yang mengkaji modifikasi permukaan TiO2 untuk fotokatalisis cahaya tampak. |
| Kecukupan & Kemutakhiran Data & Metodologi | : | Sumber pustaka yang digunakan bersumber dari jurnal namun terdapat 4 referensi yang lebih dari 10 tahun terakhir. |
| Kelengkapan Unsur dan Kualitas Penerbit | : | Terbitan lengkap memuat volume, nomor, tahun dan daftar isi. Jurnal internasional bereputasi terindeks SCOPUS (Q4) dengan nilai SJR 0,24 |

Semarang, 10 Okt 2022
Penilai 2

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Jabatan/Pangkat : Guru Besar

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2040023

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## Surface modification of $TiO_2$ for visible light photocatalysis: Experimental and theoretical calculations of its electronic and optical properties

Dessy Ariyanti, Surayya Mukhtar, Nisar Ahmed, Zhuofeng Liu, Junzhe Dong and Wei Gao



https://doi.org/10.1142/S0217979220400676

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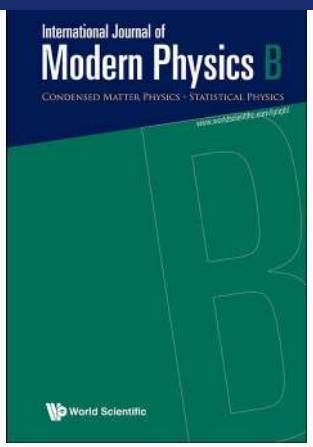


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Volume 34, Issue 01n03 (30 January 2020)

SPECIAL ISSUE — MMPD 2019

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## Preface

Wei Gao, Peng Cao and Saifang Huang

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## Effect of process parameters on the microstructure evolution of laser surface quenched Ni-Al bronze

Zhenbo Qin, Da-Hai Xia, Yida Deng, Wenbin Hu and Zhong Wu

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## Thermomechanical powder processing of beta-eutectoid bearing near-alpha Ti alloys

Yousef Alshammari, Fei Yang and Leandro Bolzoni

2040030

https://doi.org/10.1142/S0217979220400305

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Metals and Alloys

International Journal of Modern Physics B
Vol. 33 (2020) 2040067 (8 pages)

DOI: 10.1142/S0217979220400676



# Surface modification of $TiO_2$ for visible light photocatalysis: Experimental and theoretical calculations of its electronic and optical properties

Dessy Ariyanti[*,†,‖], Surayya Mukhtar[‡,**], Nisar Ahmed[§,††], Zhuofeng Liu[¶,‡‡], Junzhe Dong[†,§§] and Wei Gao[†,¶¶]

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Surface modification has been used as a method to create defects on $TiO_2$ materials, which can improve their desirable properties. In this paper, defected $TiO_2$ nano-powder was successfully synthesized by chemical reduction using $NaBH_4$ as the reducing agent at 300–400°C under argon atmosphere. High defect concentration can be produced by increasing process temperature. The modified $TiO_2$ shows good visible light absorption and photocatalytic activity on degradation of Rhodamine B (4–9 times higher than the pristine $TiO_2$) with the visible light irradiation. Further XPS analysis and theoretical studies using full potential linearized augmented plane wave (FP-LAPW) method as implemented in wien2k code revealed the existence of oxygen vacancy and $Ti^{3+}$ in the modified samples. These types of defects were responsible for the modifications of the electronic and optical properties of $TiO_2$, resulting in the improved photocatalytic activity in visible light irradiation.

[‖] Corresponding author.

International Journal of Modern Physics B VOL. 34, NO. 01n03



# Effect of process parameters on the microstructure evolution of laser surface quenched Ni-Al bronze

Zhenbo Qin, Da-Hai Xia, Yida Deng, Wenbin Hu and Zhong Wu

**Doi:** https://doi.org/10.1142/S0217979220400299

Previous Next

## Abstract

Laser surface quenching technology was used to modify the surface microstructure of as-cast Ni-Al bronze (NAB). The modified microstructure was studied by scanning electron microscopy (SEM), and the effect of laser process parameters on microstructure evolution was investigated. It was found that a fine-grained zone with fully ββ phase microstructure formed on the surface of NAB. The depth of the fine-grained zone increased with the increase of laser power, and surface melting occurred when the power reached a threshold value. Laser scanning at a low rate caused the coarsening of grain boundary, while too high rate led to incomplete quenching. Spot overlap ratio determined the microstructure of the superimposed area, and unsuitable ratio would cause bulky κκ precipitation at the grain boundary or incomplete transformation from αα phase to ββ phase.

**Keywords:** Ni-Al bronzelaser surface quenchingmicrostructure characterizationlaser parameters

**PACS:** 81.65.LP

International Journal of Modern Physics BVol. 34, No. 01n03, 2040030 (2020) Metals and Alloys

# Thermomechanical powder processing of beta-eutectoid bearing near-alpha Ti alloys



Yousef Alshammari, Fei Yang and Leandro Bolzoni

https://doi.org/10.1142/S0217979220400305 | **Cited by:** 0

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**SPECIAL ISSUE — MMPD 2019**

Next

## Abstract

This work focuses on developing near-alpha Ti alloys via the selective addition of small concentrations of low-cost eutectoid ββ-stabilizers like Cu and Mn. In particular, these newly designed near-alpha Ti alloys are manufactured via the cheapest powder metallurgy route of cold pressing plus sintering. Moreover, thermomechanical deformation of the sintered alloys via hot forging in the α + β α+β and ββ field was also investigated aiming to enhance the mechanical properties through reduction of the residual porosity and microstructural control. It is found that the initial addition of a small amount of eutectoid ββ-stabilizers leads to higher tensile properties with comprision to pure Ti produced by powder metallurgy, and this is due to the formation of a coarse lamellar structure due to the presence of ββ-stabilizers. Further enhancement of the strength is achieved by means of hot thermomechanical processing thanks to sealing of the residual pores, texturing, and refinement of the microstructural features.

**Keywords:** Titanium alloyspowder metallurgyeutectoid ββ-stabilizerthermomechanical processing mechanical properties