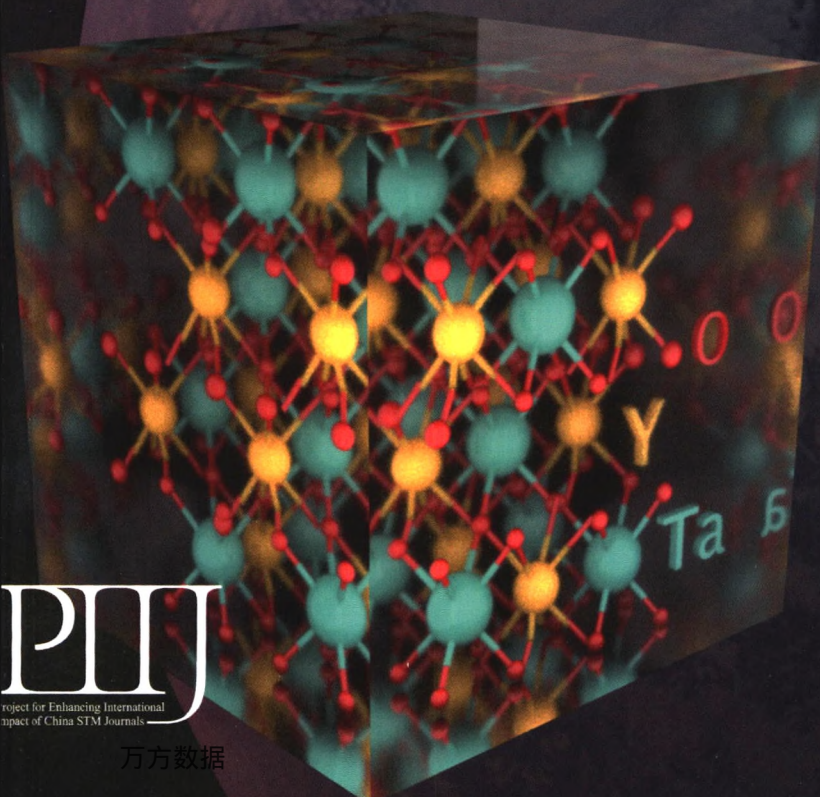


RARE METALS

www.editorialmanager.com/rmet

稀有金属 (英文版)



RARE METALS (Monthly)

Volume 39 • Number 5 • May 2020

Special Issue: Advanced Structural Ceramics Technology and Characteristics

Guest Editors: Jing Feng · Guang-Hua Liu · Chun-Lei Wan

HIGHLIGHTS

Two-electron oxygen reduction reaction by high-loading molybdenum single-atom catalysts

X. Zhao · Y.-G. Li 455

Realizing high performance of solid-state lithium metal batteries by flexible ceramic/polymer hybrid solid electrolyte

C.-L. Yan 458

EDITORIAL

Editorial for advanced structural ceramics technology and characteristics

J. Feng · G.-H. Liu · C.-L. Wan 460

REVIEW PAPERS

Promising high-thermal-conductivity substrate material for high-power electronic device: silicon nitride ceramics

F. Hu · Z.-P. Xie · J. Zhang · Z.-L. Hu · D. An 463

Plasma spray-physical vapor deposition toward advanced thermal barrier coatings: a review

M.-J. Liu · G. Zhang · Y.-H. Lu · J.-Q. Han · G.-R. Li · C.-X. Li · C.-J. Li · G.-J. Yang 479

Recent progress in thermal/environmental barrier coatings and their corrosion resistance

H.-F. Chen · C. Zhang · Y.-C. Liu · P. Song · W.-X. Li · G. Yang · B. Liu 498

Recent progress in ceramic matrix composites reinforced with graphene nanoplatelets

B.-Y. Zhou · S.-J. Fan · Y.-C. Fan · Q. Zheng · X. Zhang · W. Jiang · L.-J. Wang 513

Reactive-sintering B₄C matrix composite for armor applications

C. Wu · Y.-K. Li · C.-L. Wan 529

ORIGINAL PAPERS

Thermal properties of Y_{1-x}Mg_xTaO_{4-x/2} ceramics via anion sublattice adjustment

Y.-X. Zhou · Y. Zhou · P. Wu · P. Song · X.-Y. Chong · J. Feng 545

Microstructural evolution and mechanical properties of h-BN composite ceramics with Y₂O₃-AlN addition by liquid-phase sintering

B.-F. Qiu · X.-M. Duan · Z. Zhang · X.-Q. Liao · Z.-H. Yang · D.-L. Cai · D.-C. Jia · Y. Zhou 555

Mechanical properties and in situ fracture behavior of SiO₂/phosphate geopolymer composites

C.-Q. Yu · Y.-R. Yu · Y.-M. Zhao · P.-G. He · C.-S. Xu · S. Fu · Z.-H. Yang 562

Processing and properties of PcBN composites fabricated by HPHT using PSN and Al as sintering additive

M.-L. Li · L.-X. Liang · H.-L. Wang · P.-B. Zhao · X.-T. Zhao · G. Shao · R. Zhang 570

Microstructure and properties of 3D-printed alumina ceramics with different heating rates in vacuum debinding

H. Li · Y.-S. Liu · Y.-S. Liu · Q.-F. Zeng · K.-H. Hu · J.-J. Liang · Z.-G. Lu 577

Preparation, structure and mechanical properties of Sialon ceramics by transition metal-catalyzed nitriding reaction

Q.-M. Xiong · Z. Chen · J.-T. Huang · M. Zhang · H. Song · X.-F. Hou · X.-B. Li · Z.-J. Feng 589

Microstructure and properties of YG8 cemented carbide with different pulse currents

L. Wei · Y. Yang · G. Yang 597

Cover Picture

Y.-X. Zhou, et al. Thermal properties of Y_{1-x}Mg_xTaO_{4-x/2} ceramics via anion sublattice adjustment

Further articles can be found at link.springer.com

Instructions for Authors for *Rare Met.* are available at www.springer.com/12598

ISSN 1001-0521



RARE METALS (Monthly)

Volume 39 • Number 5 • May 2020

Special Issue: Advanced Structural Ceramics Technology and Characteristics

Guest Editors: Jing Feng · Guang-Hua Liu · Chun-Lei Wan

HIGHLIGHTS

Two-electron oxygen reduction reaction by high-loading molybdenum single-atom catalysts

X. Zhao · Y.-G. Li 455

Realizing high performance of solid-state lithium metal batteries by flexible ceramic/polymer hybrid solid electrolyte

C.-L. Yan 458

EDITORIAL

Editorial for advanced structural ceramics technology and characteristics

J. Feng · G.-H. Liu · C.-L. Wan 460

REVIEW PAPERS

Promising high-thermal-conductivity substrate material for high-power electronic device: silicon nitride ceramics

F. Hu · Z.-P. Xie · J. Zhang · Z.-L. Hu · D. An 463

Plasma spray-physical vapor deposition toward advanced thermal barrier coatings: a review

M.-J. Liu · G. Zhang · Y.-H. Lu · J.-Q. Han · G.-R. Li · C.-X. Li · C.-J. Li · G.-J. Yang 479

Recent progress in thermal/environmental barrier coatings and their corrosion resistance

H.-F. Chen · C. Zhang · Y.-C. Liu · P. Song · W.-X. Li · G. Yang · B. Liu 498

Recent progress in ceramic matrix composites reinforced with graphene nanoplatelets

B.-Y. Zhou · S.-J. Fan · Y.-C. Fan · Q. Zheng · X. Zhang · W. Jiang · L.-J. Wang 513

Reactive-sintering B₄C matrix composite for armor applications

C. Wu · Y.-K. Li · C.-L. Wan 529

ORIGINAL PAPERS

Thermal properties of Y_{1-x}Mg_xTaO_{4-x/2} ceramics via anion sublattice adjustment

Y.-X. Zhou · Y. Zhou · P. Wu · P. Song · X.-Y. Chong · J. Feng 545

Microstructural evolution and mechanical properties of h-BN composite ceramics with Y₂O₃-AlN addition by liquid-phase sintering

B.-F. Qiu · X.-M. Duan · Z. Zhang · X.-Q. Liao · Z.-H. Yang · D.-L. Cai · D.-C. Jia · Y. Zhou 555

Mechanical properties and in situ fracture behavior of SiO₂/phosphate geopolymer composites

C.-Q. Yu · Y.-R. Yu · Y.-M. Zhao · P.-G. He · C.-S. Xu · S. Fu · Z.-H. Yang 562

Processing and properties of PcBN composites fabricated by HPHT using PSN and Al as sintering additive

M.-L. Li · L.-X. Liang · H.-L. Wang · P.-B. Zhao · X.-T. Zhao · G. Shao · R. Zhang 570

Microstructure and properties of 3D-printed alumina ceramics with different heating rates in vacuum debinding

H. Li · Y.-S. Liu · Y.-S. Liu · Q.-F. Zeng · K.-H. Hu · J.-J. Liang · Z.-G. Lu 577

Preparation, structure and mechanical properties of Sialon ceramics by transition metal-catalyzed nitriding reaction

Q.-M. Xiong · Z. Chen · J.-T. Huang · M. Zhang · H. Song · X.-F. Hou · X.-B. Li · Z.-J. Feng 589

Microstructure and properties of YG8 cemented carbide with different pulse currents

L. Wei · Y. Yang · G. Yang 597

Cover Picture

Y.-X. Zhou, et al. Thermal properties of Y_{1-x}Mg_xTaO_{4-x/2} ceramics via anion sublattice adjustment

Further articles can be found at link.springer.com

Instructions for Authors for *Rare Met.* are available at www.springer.com/12598

ISSN 1001-0521



9 771001 052206