



Structural properties of erbium-activated silica-titania glasses: modeling by molecular dynamics method

Submitted by Stéphane Chaussedent on Tue, 03/10/2015 - 14:47

Titre	Structural properties of erbium-activated silica-titania glasses: modeling by molecular dynamics method
Type de publication	Communication
Type	Communication avec actes dans un congrès
Année	2000
Langue	Anglais
Date du colloque	26-27/01/2000
Titre du colloque	Symposium on Integrated Optoelectronics
Titre des actes ou de la revue	Rare-Earth-Doped Materials and Devices IV
Volume	3942
Pagination	243-252
Auteur	Chaussedent, Stéphane [1], Bernard, Christophe [2], Monteil, André [3], Balu, Nathalie [4], Obriot, Jacques [5], Ronchin, Sabina [6], Tosello, Cristiana [7], Ferrari, Maurizio [8]
Editeur scientifique	Jiang, Shibin [9]
Pays	Etats-Unis
Editeur	SPIE
Ville	San Jose
Résumé en anglais	Here, we use molecular dynamics simulation to reconstruct a silica-titania glass with a Ti/Si atomic ratio of 8.5% activated by 0.7 at% of erbium. These quantities are chosen because they give both refractive index and optically ions concentration suitable for applications. We use a modified Born-Mayer-Huggins potential taking into account a three- body interaction. The distribution of TiO ₄ and SiO ₄ units as well as the bridging to non-bridging oxygen ratios are evaluated. The local environment of rare-earth ions is also analyzed. In particular, the clustering of erbium is discussed. From the simulated structure, the crystal-field strength is computed and discussed according to the Er ³⁺ local environment. Finally, results are compared with information obtained by Raman and photoluminescence spectra.
URL de la notice	http://okina.univ-angers.fr/publications/ua8711 [10]
DOI	10.1117/12.382864 [11]
Lien vers le document en ligne	http://dx.doi.org/10.1117/12.382864 [11]

Liens

[1] <http://okina.univ-angers.fr/stephane.chaussedent/publications>

- [2] [http://okina.univ-angers.fr/publications?f\[author\]=15456](http://okina.univ-angers.fr/publications?f[author]=15456)
- [3] [http://okina.univ-angers.fr/publications?f\[author\]=8745](http://okina.univ-angers.fr/publications?f[author]=8745)
- [4] [http://okina.univ-angers.fr/publications?f\[author\]=15457](http://okina.univ-angers.fr/publications?f[author]=15457)
- [5] [http://okina.univ-angers.fr/publications?f\[author\]=15458](http://okina.univ-angers.fr/publications?f[author]=15458)
- [6] [http://okina.univ-angers.fr/publications?f\[author\]=15459](http://okina.univ-angers.fr/publications?f[author]=15459)
- [7] [http://okina.univ-angers.fr/publications?f\[author\]=15460](http://okina.univ-angers.fr/publications?f[author]=15460)
- [8] [http://okina.univ-angers.fr/publications?f\[author\]=8790](http://okina.univ-angers.fr/publications?f[author]=8790)
- [9] [http://okina.univ-angers.fr/publications?f\[author\]=15462](http://okina.univ-angers.fr/publications?f[author]=15462)
- [10] <http://okina.univ-angers.fr/publications/ua8711>
- [11] <http://dx.doi.org/10.1117/12.382864>

Publié sur *Okina* (<http://okina.univ-angers.fr>)