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Manuscript #	NM04101149
Current Revision #	0
Submission Date	11th Oct 04
Current Stage	Submission in process
Title	ELSA - Materials Science of the Future?
Manuscript Type	Article
Manuscript Comment	One table is included in the manuscript text. Prof. W.M.Yen at UGA, Athens, GA is very knowledgeable in the field. wyen@hal.physast.uga.edu http://www.physast.uga.edu/people/fac-wmy.html
Corresponding Author	Dr. Mattias Klintonberg (Lawrence Berkeley National Laboratory) .
Contributing Author	N/A
Abstract	We present ELSA, The Electronic Structure libRARY for materials design, an open source project where the materials properties for tens of thousands materials are collected and made freely available to researchers all over the world. At the time of writing the library contains the electronic structures of 20,000 inorganic compounds obtained using state-of-the-art computational methods. So far, the collection of electronic structures has been used in the efforts to improve nuclear radiation detector materials for instrumentation for nuclear homeland security, treaty verification for nuclear non-proliferation, and for biomedical imaging. A number of compounds are presented as possible ultra-fast nuclear radiation detector materials. Preliminary measurements indicate that BiOF is a first example of the previously unknown s-p core-valence luminescence process.
Author Reviewer Suggestions to Include	N/A
Author Reviewer Suggestions to Exclude	N/A
Manuscript Keywords	71.15.-m Methods of electronic structure calculations, 78. Optical properties, condensed-matter spectroscopy and other interactions of radiation and particles with condensed matter, 80. Interdisciplinary physics and related areas of science and technology
Dual Publication	No
Duality of Interest	No
Contributing Author Notification	MK

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