

High-level accessibility review – BTAA (National Technical Reports Library (NTRL) Platform)

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NTRL Platform

Summary

Top 3 problems for the NTRL Platform

This assessment covers portions of the NTRL Platform. The assessment revealed moderate problems with screen reader compatibility, resulting in screen reader users rarely missing critical information needed to understand content and operate features.

1. **Color Contrast** – The primary “blue” color does not provide sufficient contrast in many scenarios.
2. **Non Text Contrast** – Several informative icons are low in contrast.
3. **Name, Role, Value** – Several roles and states for important page components and functions are missing or incorrect.

Accessibility findings

Project wide issues

The issues presented in this section were identified in multiple pages and are recorded here to avoid repetition. These are applicable to each screen. Due to particularities, similar issues are still reported on a page per page basis, where applicable.

Automated findings using Axe

Issues found through automated testing come from the Axe plugin, an open source accessibility testing tool that is available for Chrome, Firefox and Edge. Details here: <https://www.deque.com/products/axe/>.

1. **SC 1.3.1 A** – The ‘Help’ menu in the header is missing required child roles.
2. **SC 1.3.1 A** – The header and side navigation contain menuitem and row roles that are not appropriately nested.
3. **SC 4.1.2 A** – The ‘Fields’ field, the Date Published Start and Date Published End are missing a programmatic label.
4. **SC 1.3.1 A** – The ‘Help’ menu in the header contains a list with invalid markup nested within.
5. **SC 4.1.2 A** – The ‘Fields Title’, ‘Date Published Start’, ‘Date Published End’ fields are all missing an accessible name.
6. **SC 1.4.3 AA** – All instances of white text on light blue or light blue against white background are low in contrast. Main text color #FFFFFF against the blue #5C9CCC results in 2.965:1 contrast ratio.
7. **SC 1.4.3 AA** – All instances of the orange text against the light background are low in contrast. Main text color #E17009 against the light background #FCDFD results in 3.2:1 contrast ratio.

Additional manual findings using NVDA screen reader

1. **SC 1.4.11 AA** – All instances of the graphics that indicate expand/collapse/contains submenu are low in contrast.
Yellow/orange #FCC212 against an adjacent color #FCDFD results in a 1.6:1 contrast ratio.
Blue #80B7DC against an adjacent color #DFEFFC results in a 1.8:1 contrast ratio.
Blue #6CAAD4 against an adjacent color #E2F0FB results in a 2.2:1 contrast ratio.
Blue #6CAAD4 against an adjacent color #EAF4FD results in a 2.3:1 contrast ratio.
2. **SC 2.4.4 A** – In the ‘Refine’ section, multiple instances of the “Show More” links exist without added context to identify their unique purpose.
3. **SC 2.5.3 A** – In the ‘Refine > Keywords’ section, the “Show More” link does not have its visible text in its programmatic name, which is currently “Clickhow more criteria”
4. **SC 2.5.3 A** – The “Help” menu reads “menu bar”
5. **SC 2.4.7 AA** – The checkboxes and comboboxes do not receive a clearly visible focus indicator

6. **SC 4.1.2 A** – The ‘Fields’, ‘Date Published’ and ‘Refine’ sections do not programmatically indicate their expand/collapse status.
7. **SC 1.3.1 A** – The “Advanced Search” content acts as a section heading but is missing required markup or semantics.

1. NTRL Landing Page

Source: <https://ntrl.ntis.gov/NTRL/>

Test case: Initial interface – menus & submenus, search boxes, images, etc.

The screenshot shows the NTRL landing page. At the top, there is a header with the NTRL logo and the text 'National Technical Reports Library'. Below the header is a navigation bar with a 'Help' dropdown. The main content area is divided into two sections: 'Advanced Search' on the left and 'Search Results' on the right. The 'Advanced Search' section includes a search box, a checkbox for 'Only documents with full text', and buttons for 'Search' and 'Clear'. Below this are sections for 'Fields' (with a dropdown for 'Title' and an 'Add Field' button), 'Date Published' (with a range selector from '<1900' to '2021'), and 'Refine' (with a dropdown for 'Source' and a list of source categories like 'Non Paid ADAS (505421)', 'Technical Information Center Oak Ridge Tennessee (359578)', etc.). The 'Search Results' section features a 'Filter results' box, a 'Search Relevance' dropdown, a 'DESC' dropdown, and a 'Filter Results' button. Below this is a table with columns for 'Title/Authors', 'Accession Number', 'Publication Year', 'Page Count', and 'Download'. The table currently shows 'No items'. At the bottom of the page, there is a footer with copyright information and links for 'FOIA', 'ABOUT NTIS', 'EMERGENCY POLICY', 'INFORMATION QUALITY', and 'USA.GOV'.

Automated findings using Axe

1. **SC 4.1.1 A** – The page contains several instances of the ID 'searchResultsForm:searchResultsTable_rppLabel'
2. **SC 4.1.2 A** – The 'Search Relevance' field is missing a label.
3. **SC 4.1.2 A** – The 'Search Relevance', 'DESC' fields are all missing an accessible name.

Additional manual findings using NVDA screen reader

1. **SC 1.3.1. A** – The "Search Results" content is a section heading but is missing markup or semantics.
2. **SC 4.1.2 A** – When the "First Page", "Previous Page", "Next Page" and "Last Page" pagination controls are visually disabled, they are not programmatically disabled.

2. NTRL Search Results

Source: <https://ntrl.ntis.gov/NTRL/>

Test case: Search for "nonlinear optics" in the Advance Search box on initial landing page/interface. Test search result page:

- o "Search Relevance" options – change to Title
- o "Date Published" facet on the left-menu bar– limit 2010 to 2021
- o Test "Refine" on left -- Document Type: Technical Report
- o "Filter results" at the top with the term "Felix"
- o Test PDF by selecting the Download PDF icon for any result.
- o Test XML by selecting the Download XML icon for any result.

The screenshot shows the NTRL search results page. On the left, there is an 'Advanced Search' sidebar with a search box containing 'nonlinear optics'. Below the search box are filters for 'Fields' (Title), 'Date Published' (ranging from <1900 to 2021), and 'Refine' (Source). The main content area is titled 'Search Results' and features a 'Filter results' bar with 'Search Relevance' set to 'DESC'. Below this is a table of search results with the following columns: Title/Authors, Accession Number, Publication Year, Page Count, and Download. The first result, 'Nonlinear Optical Apparatus Using Optical Fibers.' by Rand, S. G., is highlighted in yellow. Other results include 'Conical Refraction in Nonlinear Optics.', 'Deterministic Chaos and Nonlinear Dynamics in Nonlinear Optics.', 'IR Liquid Switch, Volume 1.', 'Photorefractive and Nonlinear-Optical Properties of New Electrooptic Materials.', 'Optical Bistability, 1988.', 'Stable Second-Order Optical Nonlinearity in Novel Photocrosslinkable Polymers.', 'Nonlinear Optical Propagation and Self-Limiting Effect in Liquid-Crystalline Fibers.', 'Progress in Optical Materials Research (Keynote Talk).', and 'Annual Report of the Quantum Optics Laboratory, 1985.'

Automated findings using Axe

1. **SC 4.1.1 A** – The page contains several instances of the ID 'searchResultsForm:searchResultsTable_rppLabel'
2. **SC 4.1.2 A** – The 'Search Relevance' field is missing a label.
3. **SC 4.1.2 A** – The 'Search Relevance', 'DESC' fields are all missing an accessible name.

Additional manual findings using NVDA screen reader

1. **SC 1.3.1. A** – The "Search Results" content is a section heading but is missing markup or semantics.
2. **SC 4.1.2 A** – When the "First Page", "Previous Page", "Next Page" and "Last Page" pagination controls are visually disabled, they are not programmatically disabled.
3. **SC 1.4.3 AA** – The orange text against the yellow background is low in contrast. Text color #FF6347 against #FBEC88 results in 2.4:1 contrast.
4. **SC 1.4.4 AA** – At 200% page zoom, content in the search results table is cut-off.
5. **SC 1.4.3 AA** – On mouse hover, orange text #FF6347 against the blue background #DDEC7 is low in contrast with a 2.4:1 contrast ratio. NOTE: the contrast ratio is worse when the lower gradient is also present.
6. **SC 1.4.3 AA** – On mouse hover, gray text #676767 against the darker areas of the blue gradient e.g. #D1E5F5 is low in contrast with a 4.4:1 contrast ratio. NOTE: Contrast ratios change with the gradient.
7. **SC 1.4.11 AA** – The "First Page", "Previous Page", "Next Page" and "Last Page" pagination controls do

not provide sufficient contrast. Primary control color #6DABD4 against an adjacent background #E1EFFB provides 2.1:1 contrast ratio.

8. **SC 1.4.3 AA** – The ‘current’ pagination item color #E17009 against the background #F7F9FA is low in contrast with a 3:1 contrast ratio.
9. **SC 2.4.3 A** – Hidden content is included in the tab order, “Download PDF”, “Download Full Text”
10. **SC 4.1.2 A** – The link-type function in the search results table is missing a programmatic link role.
11. **SC 4.1.2 A** – When a user modifies the ‘Date Published’ comboboxes, the programmatic value is not changed while the visual value is.
12. **SC 2.4.4 A** – When a user adds Refine Facets, the “Remove” links do not provide sufficient context as to the purpose of the links.
13. **SC 4.1.3 A** – As a user refines/filters the results, the updated result number status message is not automatically announced by Assistive Technology.
14. **PDF** – The downloaded PDF is not PDF/UA compliant and therefore will not be accessible to all users.

3. NTRL Report Landing Page

Source: <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/AD1031624.xhtml>

Test case: View Report landing page (ex: Measurement of nonlinear coefficients of crystals at terahertz frequencies via High Field THz at the FELIX FEL at <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/AD1031624.xhtml>)

- Test PDF by selecting the PDF icon.
- Test XML by selecting the XML icon.

NTRL
National Technical Reports Library
U.S. Department of Commerce

National Technical Reports Library

Home Help

Details

Actions:

Download

Measurement of nonlinear coefficients of crystals at terahertz frequencies via High Field THz at the FELIX FEL.

AD1031624

Publication Date: 2017
Personal Author: Natfaly, M.
Page Count: 9
Abstract: We investigated the possibility of determining the nonlinear properties of Si, GaAs and GaSe⁻¹S_v and other nonlinear optical crystals in the FIR and THz regimes using the classic Maker Fringe and Z-scan techniques. The Z-scan measurements were conducted successfully, in both the FIR and THz regimes, and the measurement results in the FIR were found to be in reasonable agreement with the available literature [7, 8, 9]. We can conclude that multi-photon absorption in the FIR is no more an impediment to pumping, GaSe based, nonlinear frequency conversion devices that in the near-IR.
Keywords: • Terahertz frequencies
Source Agency: • Non Paid ADAS
NTIS Subject Category: • 46H - Radiofrequency Waves
Corporate Authors: Air Force Office of Scientific Research, Arlington, VA.
Document Type: Technical Report
Title Note: Technical Report
NTIS Issue Number: 201726

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Automated findings using Axe

1. **SC 1.4.3 AA** – The “AD1031624” text is low in contrast against the background. Primary text color #FF6347 against a background of #FCFDFD results in a 2.9:1 contrast ratio.

Additional manual findings using NVDA screen reader

Not tested due to insufficient time.