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(54) **DESIGN AND SYNTHESIS OF ADVANCED NLO MATERIALS FOR ELECTRO-OPTIC APPLICATIONS**

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(57) **ABSTRACT**

In various embodiments, chromophores are described that include novel electron acceptors, novel electron donors, and/or novel conjugated bridges that are useful in nonlinear optical applications. In some embodiments, the present invention provides chromophore architectures wherein a chromophore contains more than one electron acceptor in electronic communication with a single electron donor, and/or more than one electron donor in electronic communication with a single electron acceptor. Also described is processes for providing materials comprising the novel chromophores and polymer matrices containing the novel chromophores. Electro-optic devices described herein contain one or more of the described electron acceptors, electron donors, conjugated bridges, or chromophores.

36 Claims, 35 Drawing Sheets