

## Green materials for sustainable development

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**Abstract.** Sustainable development is an integrity of multidiscipline concept combining ecological, social and economic aspects to construct a liveable human living system. The sustainable development can be support through the development of green materials. Green materials offers a unique characteristic and properties including abundant in nature, less toxic, economically affordable and versatility in term of physical and chemical properties. Green materials can be applied for a numerous field in science and technology applications including for energy, building, construction and infrastructures, materials science and engineering applications and pollution management and technology. For instance, green materials can be developed as a source for energy production. Green materials including biomass-based source can be developed as a source for biodiesel and bioethanol production. Biomass-based materials also can be transformed into advanced functionalized materials for advanced bio-applications such as the transformation of chitin into chitosan which further used for biomedicine, biomaterials and tissue engineering applications. Recently, cellulose-based material and lignocellulose-based materials as a source for the developing functional materials attracted the potential prospect for biomaterials, reinforcing materials and nanotechnology. Furthermore, the development of pigment materials has gaining interest by using the green materials as a source due to their unique properties. Eventually, Indonesia as a large country with a large biodiversity can enhance the development of green material to strengthen our nation competitiveness and develop the materials technology for the future.

