4、 外语能力证书

Colloids and Surfaces A: Physicochemical and Engineering Aspects 673 (2023) 131860

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Bonding properties of polyurethan enhanced by branched polyamine and wood interfacial activation

Hao Wang [a,1], Hongxing Yang [a,1], Min Gu [a,1], Guanben Du [a,b,*], Kelu Ni [a], Sichen Liu [a], Tongda Liu [a], Xin Ran [a,**], Zhengjun Shi [a], Wei Gao [a], Long Yang [a,b,*]

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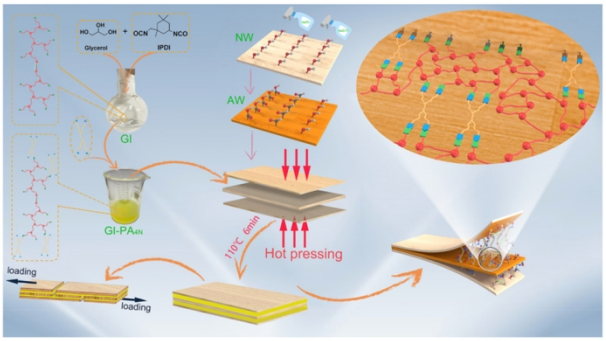
HIGHLIGHTS

- An activated wood interface equipped with -CHO and -COOH was prepared.
- A highly branched GI-$PA_{4\ N}$ adhesive with cross-linked network was synthesized.
- The dry and wet bonding strength increased by 78% and 23%, respectively.
- This work offers an effective method for producing high-performance materials.

GRAPHICAL ABSTRACT

Schematic representation of GI and GI-$PA_{4\ N}$ adhesives synthesis, wood interfacial activation, plywood fabrication and crosslinking network.



ARTICLE INFO

Keywords:
Polyurethane
Wood interfacial activation
Branched polyamine
Modified adhesive

ABSTRACT

Developing formaldehyde-free and excellent water resistance has constantly been at the center of attention of wood adhesives. In addition to enhancing the adhesive itself, the modification of wood interface can also improve its bonding strength and water resistance. In this study, aqueous solutions of $NaIO_4$ and $NaClO_2$ have been sprayed onto the surface of poplar veneer evenly. An activated wood interface equipped with -CHO and -COOH was prepared. Traditional polyurethane adhesives are primarily two-component, with excessive manufacturing cost, complicated production and use procedures. In this study, a single component high branched polyurethane adhesive (GI) was synthesized via a A_2+B_3 oligomerization method by using glycerol and isophorone diisocyanate (IPDI). Using branched polyamine ($PA_{4\ N}$) as a modifier, GI was modified to GI-$PA_{4\ N}$,

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成绩报告单

CET®

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笔　试

准考证号：[redacted]
考试时间：2018年6月

总分	听力 (35%)	阅读 (35%)	写作和翻译 (30%)
448	145	171	132

口　试

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5、 学术能力证明材料

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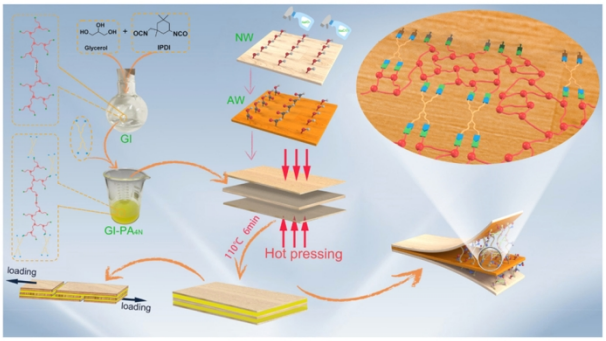

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专利公告信息

实用新型专利证书

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申请日时申请人：湖北交投智能检测股份有限公司

申请日时发明人：周智;肖开强;陈丽娟;黄岩;曹凯;李扬;汪皓

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