Nonrepetitive coloring of subdivided graphs

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A vertex coloring f of a graph G is nonrepetitive if there is no simple path $v_1, \ldots, v_{2r}$ in G such that $f(v_i) = f(v_{r+i})$ for all $i = 1, \ldots, r$. The minimum number of colors needed is the Thue chromatic number, denoted by $\pi(G)$. A subdivision of a graph is a graph obtained by splitting some of it's edges by putting new vertices on them.

We proved conjecture stated by Grytczuk [1] (also in [3]) that every graph G has a subdivision F such, that $\pi(F) \leq 3$.

The best previous bound was 4, proven by Bart and Wood [2]. B. Brear et al. [3] have proved bound 3 for trees.

References:

[1] J. Grytczuk, "Nonrepetitive Colorings of Graphs A Survey", 2006

[2] Jnos Bart, David R. Wood, "Notes on Nonrepetitive Graph Colouring", 2007

[3] B. Breara, J. Grytczuk, S. Klavar, S. Niwczyk, I. Peterin "Nonrepetitive colorings of trees", Discrete Mathematics 307 (2007) 163 172