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## Synthesis of versatile aza-heterocyclic compounds by three component ring transformation

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Dinitropyridone 1 is an excellent substrate for the nucleophilic type ring transformation to afford heterocyclic compounds and nitroanilines those are not easily available by alternative methods. When pyridone 1 was reacted with aromatic ketone in the presence of  $\text{NH}_4\text{OAc}$ , 6-arylated 3-nitropyridines 2 were formed besides bicyclic compounds 3. This method was also applicable to synthesis of cycloalka[b]pyridines 4 and 6-alkynylated/alkenylated pyridines 5, respectively. It was found to be possible to use aldehydes as the substrate, which leading to 3,5-disubstituted pyridines 6. On the other hand, when aliphatic ketones were employed as the substrate, two kinds of ring transformation proceeded. Namely, 2,6-disubstituted 4-nitroanilines 8 were formed in addition to nitropyridines 7. It was successful to apply this protocol to synthesis of N,N,2,6-tetrasubstituted nitroanilines 9 upon treatment of dinitropyridone 1 with ketone and amine in the presence of acetic acid.



## Biography

Nagatoshi Nishiwaki received his PhD from Osaka University in 1991. He worked at Osaka Kyoiku University (1991–2008). From 2000 to 2001, he joined Karl Anker Jørgensen's group at Aarhus University, Denmark. Between 2008 and 2009, he worked at Anan National College of Technology. He then moved to the School of Environmental Science and Engineering, Kochi University of Technology, in 2009, and he became a Professor in 2011. His research interests comprise synthetic organic chemistry using nitro compounds, heterocycles (ring transformations, 1,3-dipolar cycloadditions etc.), and pseudo- intramolecular reactions. He has more than 120 papers and 20 review articles.

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