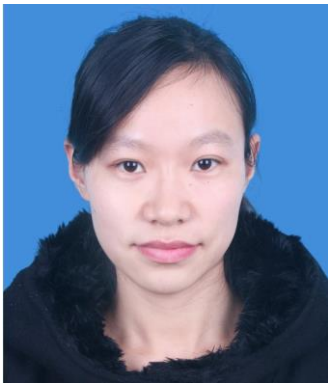

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During my past two years of PHD period, I've been studying the biochar and its effect on N cycle, especially nitrification, denitrification and the related environment impacts (N fertilizer efficiency, N2O emissions, leaching and runoff); As we know, nitrification is an important part of the soil nitrogen (N) cycle that has long concerned scientists, as this process is the key cause of low fertilizer efficiency, which can lead to groundwater contamination and emissions of the greenhouse gas N2O. So the point of my work was the effect of biochar on nitrification and related mechanisms, mainly by real-time quantitative PCR (to quantify the gene numbers of ammonia-oxidizers), PCR-DGGE, clone library (to evaluate the composition and diversity of ammonia-oxidizers). Recently, I'm summarizing the findings about the nitrification and NO3- leaching in a specially designed PVC columns trials which had conducted four-years in the fields. Since the last september, I've started the work about the gas loss (N2O,N2) of nitrogen in the paddy soils which amended with long-term successive biochar application in the field and the related the mechanism (mainly by monitoring the dynamics of gene copies of NarG, Nirs/nirk,nosZ).

So I'm interested in solving the problems induced by the N application and want to do something to address the complex interactions among N, agricultural sustainability and global changes during my graduate school.