Electronic Supplementary Material (ESI) for RSC Advances.

Preparation a novel palladium catalytic hydrogel based on graphene oxide/ chitosan NPs and cellulose nanowhiskers biopolymers

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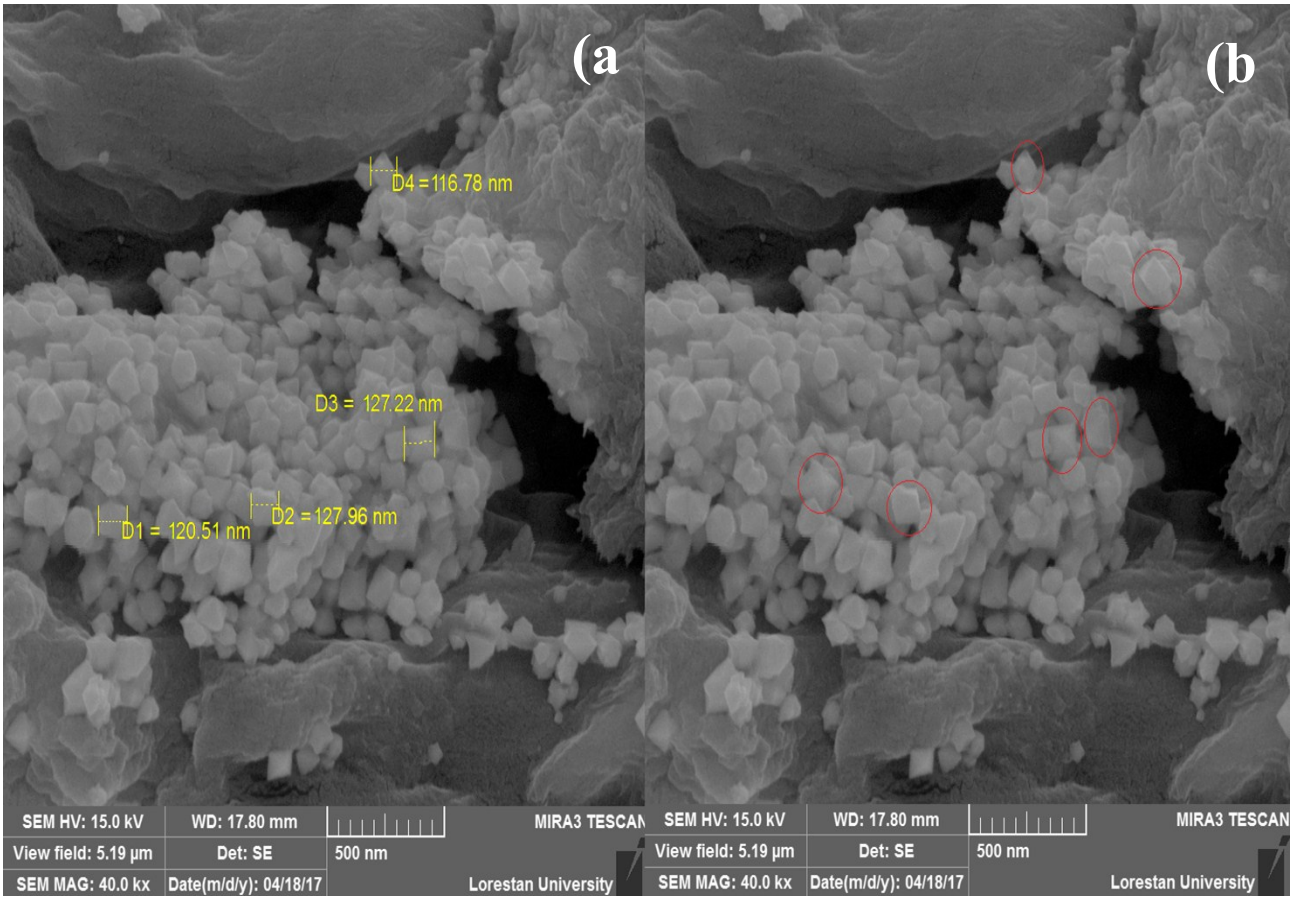
Since the palladium nanoparticles were synthesized in-situ in the hydrogel, there was no possibility of obtaining DLS analysis for palladium nanoparticles, and the only way to measure was SEM measurement software. One of SEM images containing the particle size, shown in Fig. S1a. The size of the nanoparticles was about 100-128 nm by SEM measurement software. Also shown in the Fig.1Sb synthesized Palladium nanoparticles have an octahedral and multifaceted structure, as a result, we can say that more surfaces are available and increased catalytic activity.



S1: FE-SEM images Palladium NPs in the hydrogel a) The size of the nanoparticles by SEM measurement software, b) Palladium nanoparticle octahedral and multifaceted structure

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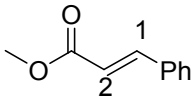

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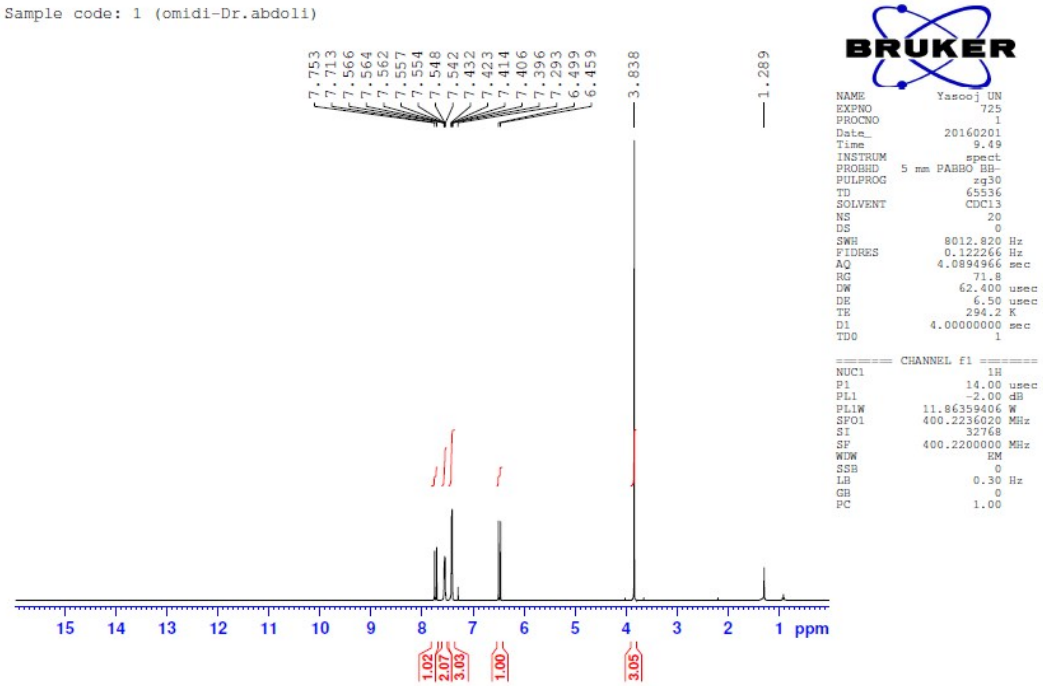

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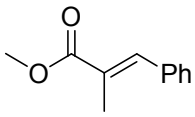

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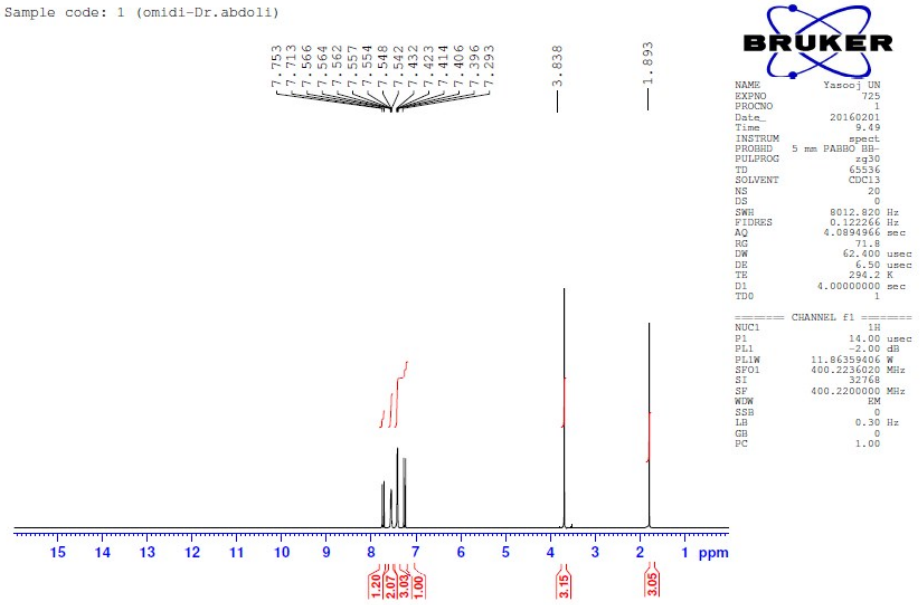
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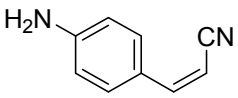
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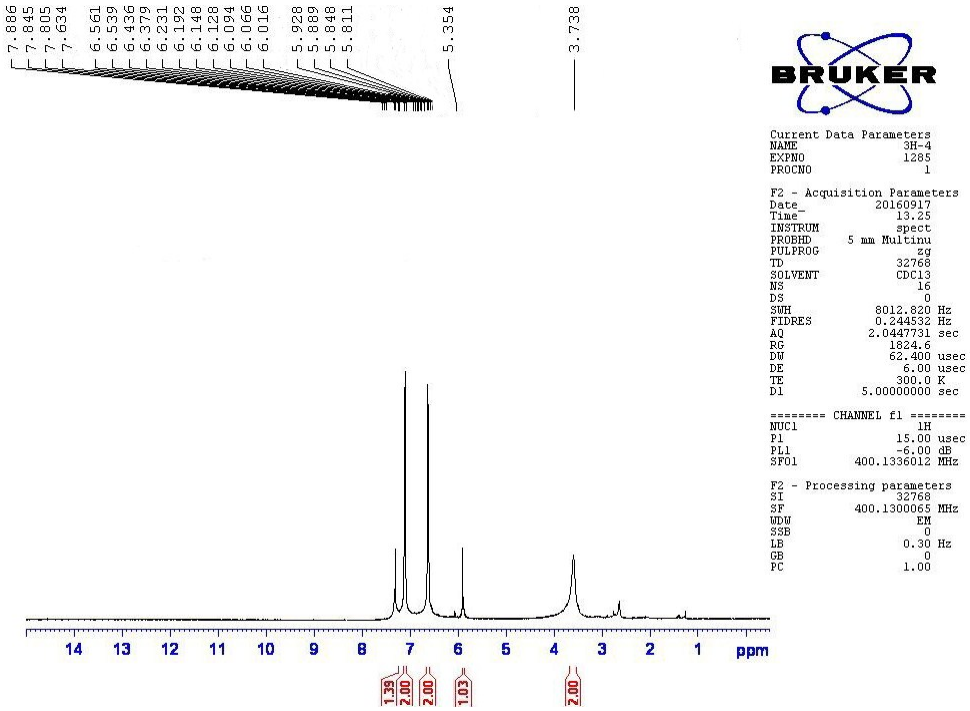
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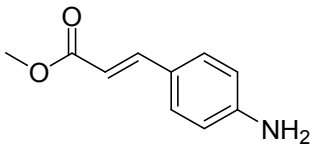

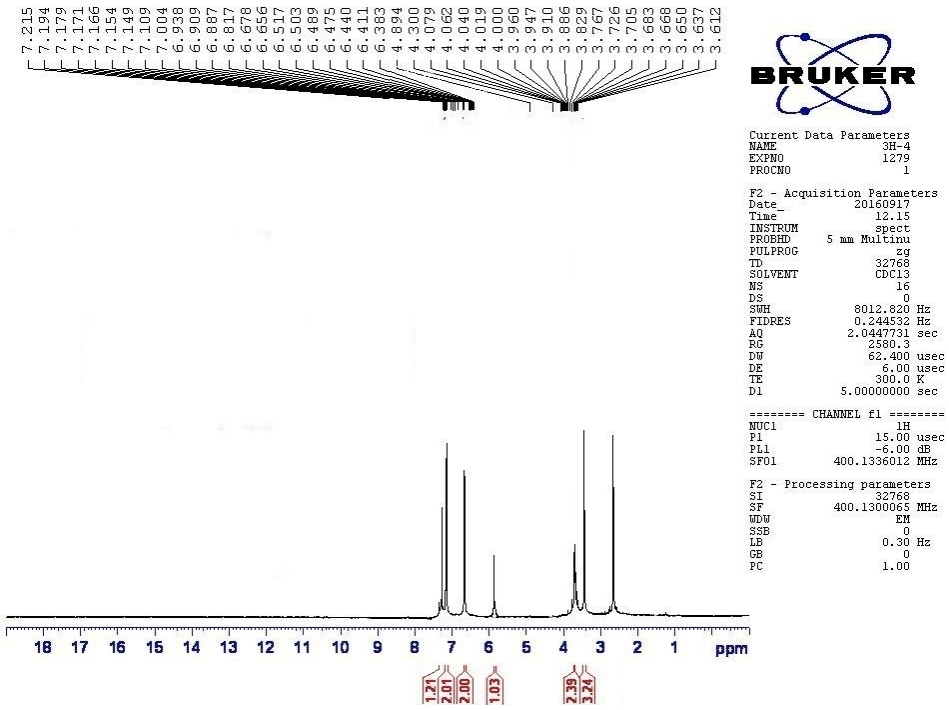

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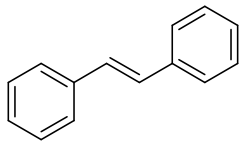

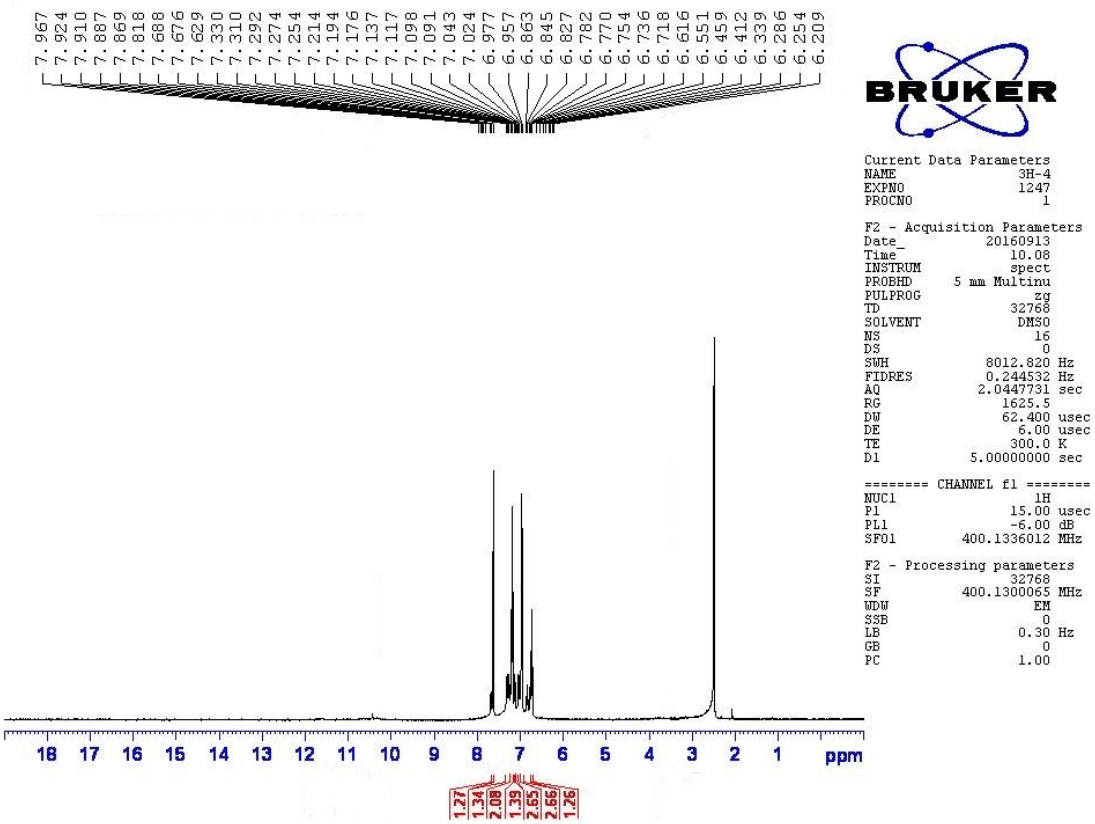

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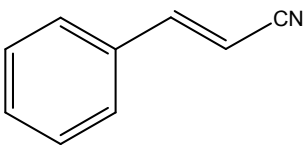
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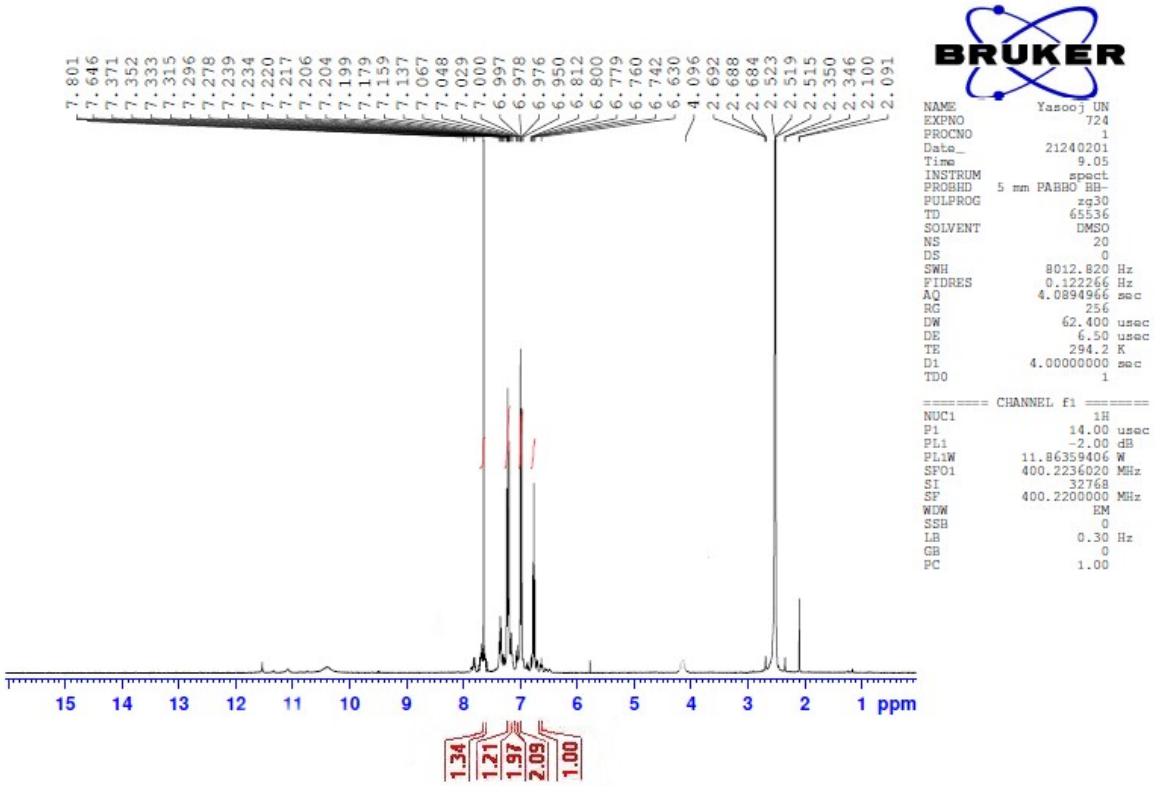
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TE 294.2 K
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======= CHANNEL f1 =======
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PL1 -2.00 dB
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