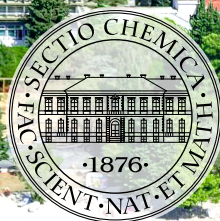


ADRIATIC NMR
18–20 September 2025, Vodice, Croatia

BOOK OF ABSTRACTS



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ADRIATIC NMR CONFERENCE

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IMPRESSUM

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Nikola Bregović, Danijel Namjesnik, Predrag Novak, Jelena Parlov Vuković

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Zagreb, 2025

Dear Participants,

It is our great pleasure to welcome you to the 8th Adriatic NMR Conference which will take place at Imperial Park Hotel, Vodice, Croatia, from 18 to 20 September 2025.

The wide scope of the Conference includes but is not limited to topics regarding the theoretical basis of NMR, method development, small molecules, Bio-NMR, benchtop NMR, spectral data interpretation and simulation, metabolomics, NMR characterization of supramolecular systems, industrial applications of NMR spectroscopy and solid-state NMR methods and applications.

We strongly believe that Adriatic NMR will foster the exchange of knowledge and experience among students and scientists and will serve as a forum for an extensive networking opportunity. With confidence that it will be a memorable event, we cordially invite you to join us in the beautiful place of Vodice in September 2025.

Looking forward to seeing you!

Predrag Novak

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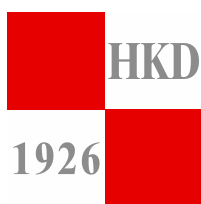
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PLENARY LECTURES

NMR IN WINE ANALYSIS: PAST, PRESENT AND FUTURE

Pavel Solovyev

Research and Innovation Centre, Fondazione Edmund Mach (FEM), San Michele all'Adige, Italy

✉ pavel.solovyev@fmach.it

Wine falsification has a time span as long, as probably the history of winemaking itself. However, the laws controlling wine quality, safety and especially genuineness are recently new in historical perspective, appearing only in the Industrial age.^[1] With the development of analytical instrumentation such as chromatography and mass spectrometry (MS), later isotope ratio mass spectrometry (IRMS) in the second half the 20th and 21st centuries those began to be used ^[2]. Nuclear magnetic resonance (NMR), however, seemed to lag behind, mostly because of its lower sensitivity compared to MS, approximately 10 orders of magnitude. NMR's advent in wine analysis started in the late 1970 s first with ethanol measurement and later site-specific natural isotopic fractionation (SNIF) for geographical determination. In this century, with significant progress in computation power, metabolomics came to stage, both targeted and untargeted. ^[3].

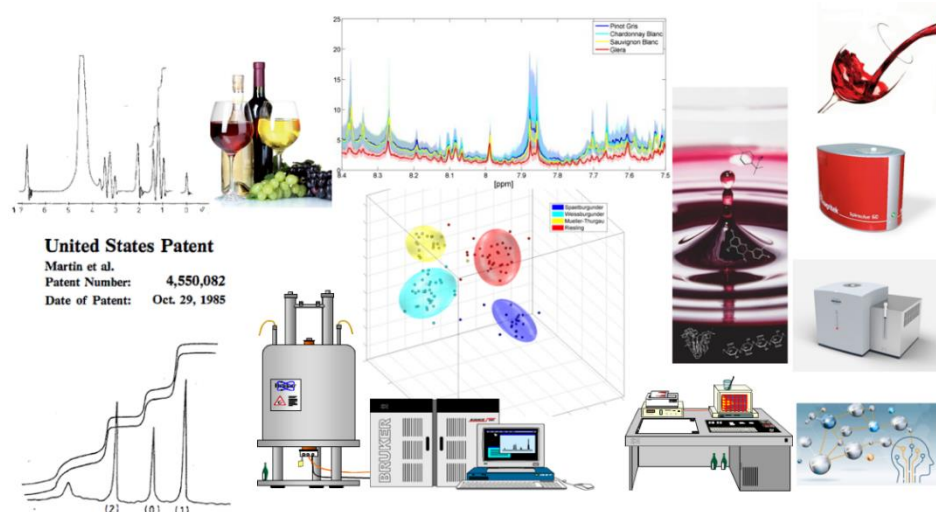


Figure 1. A collage depicting NMR use for wine analysis in the past present and possible future.

The latest steps in evolution of this method for wine analysis show a comeback of low-field or so-called benchtop NMR devices. In the future, artificial intelligence (AI) models will most probably enter the stage of this technology (see Figure 1). This lecture will cover all this in detail.

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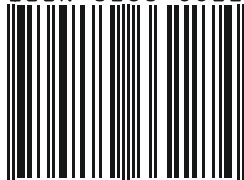
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