

Evaluation of reclaimed asphalt binder treated with bio-based rejuvenators



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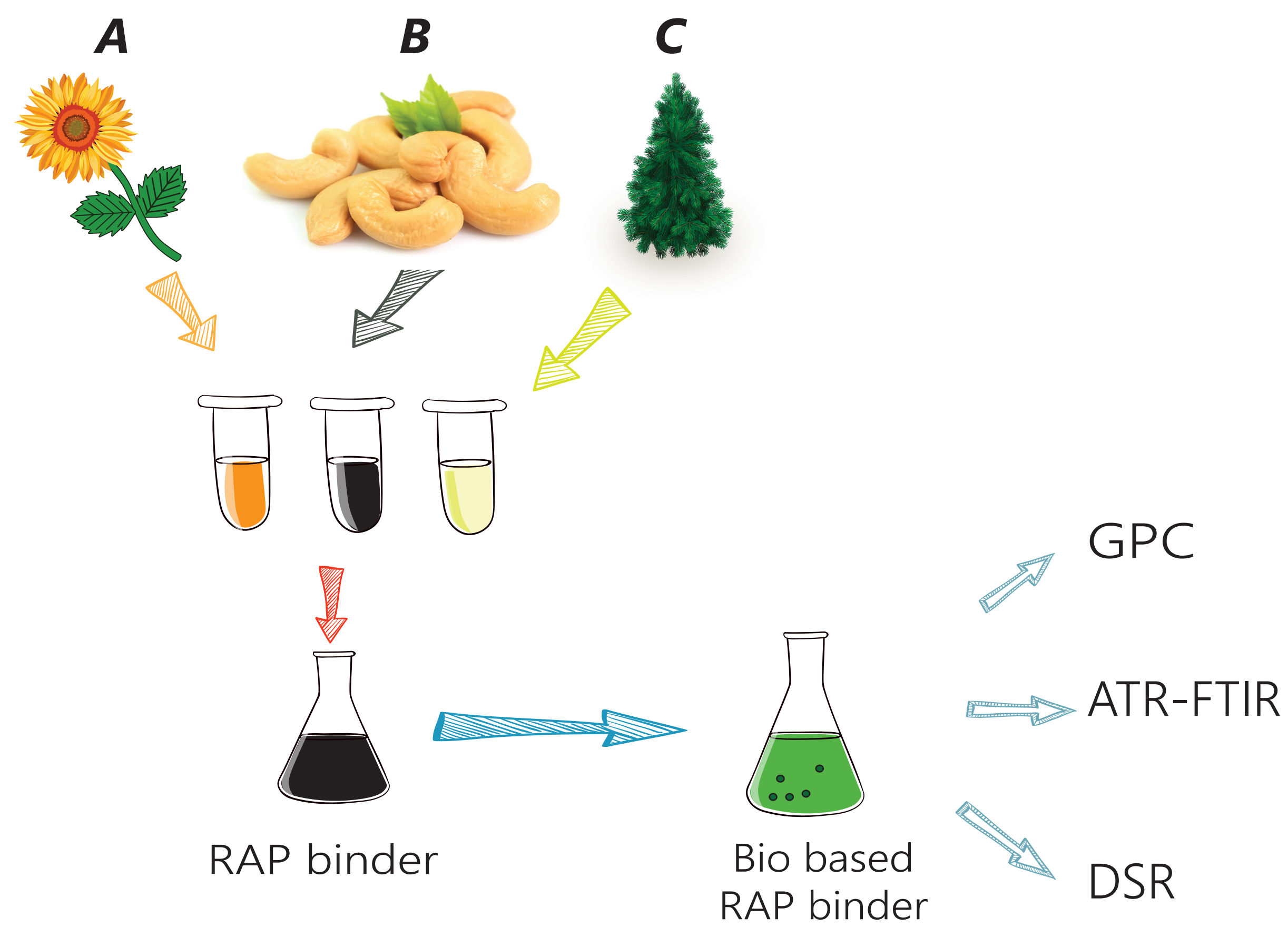
Poster N° 1



Introduction

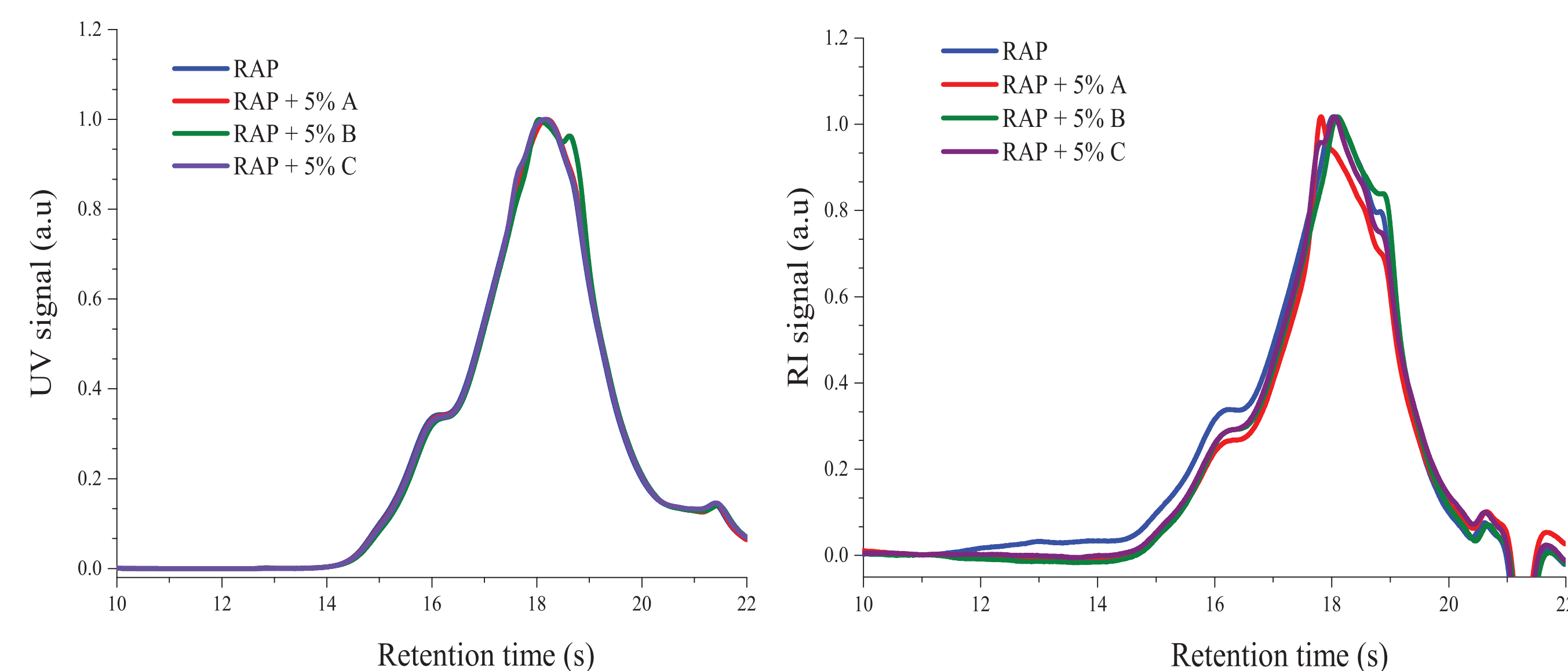
Reclaimed asphalt pavement (RAP) is generally harder than virgin bitumen due to ageing and it needs to be rejuvenated to be recycled. Three bio-based rejuvenators are used and the rejuvenating effects are evaluated chemically and rheologically. This kind of multi characterization is vital in identifying how rejuvenators could affect the RAP binder chemically and mechanically.

Materials and Methods

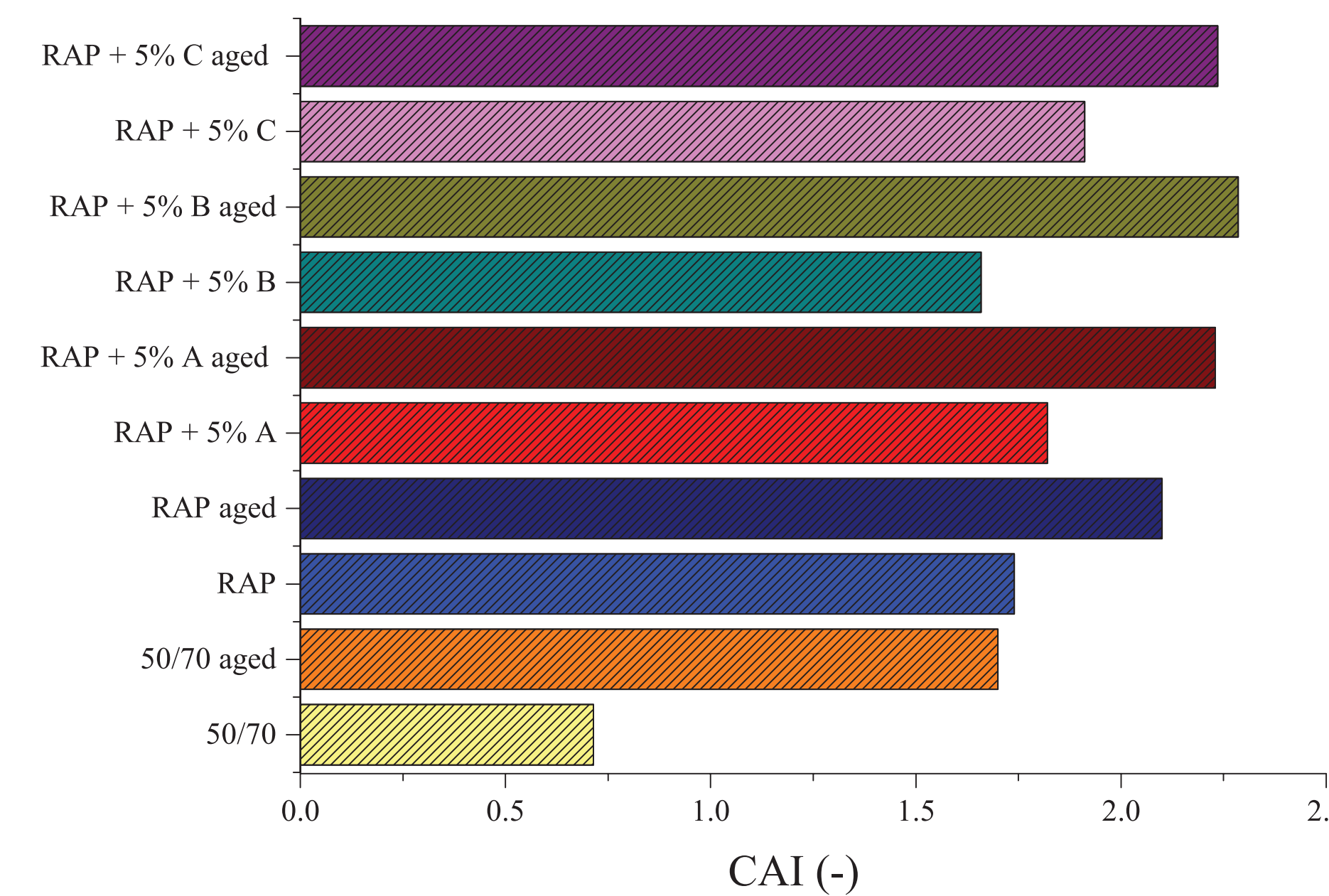
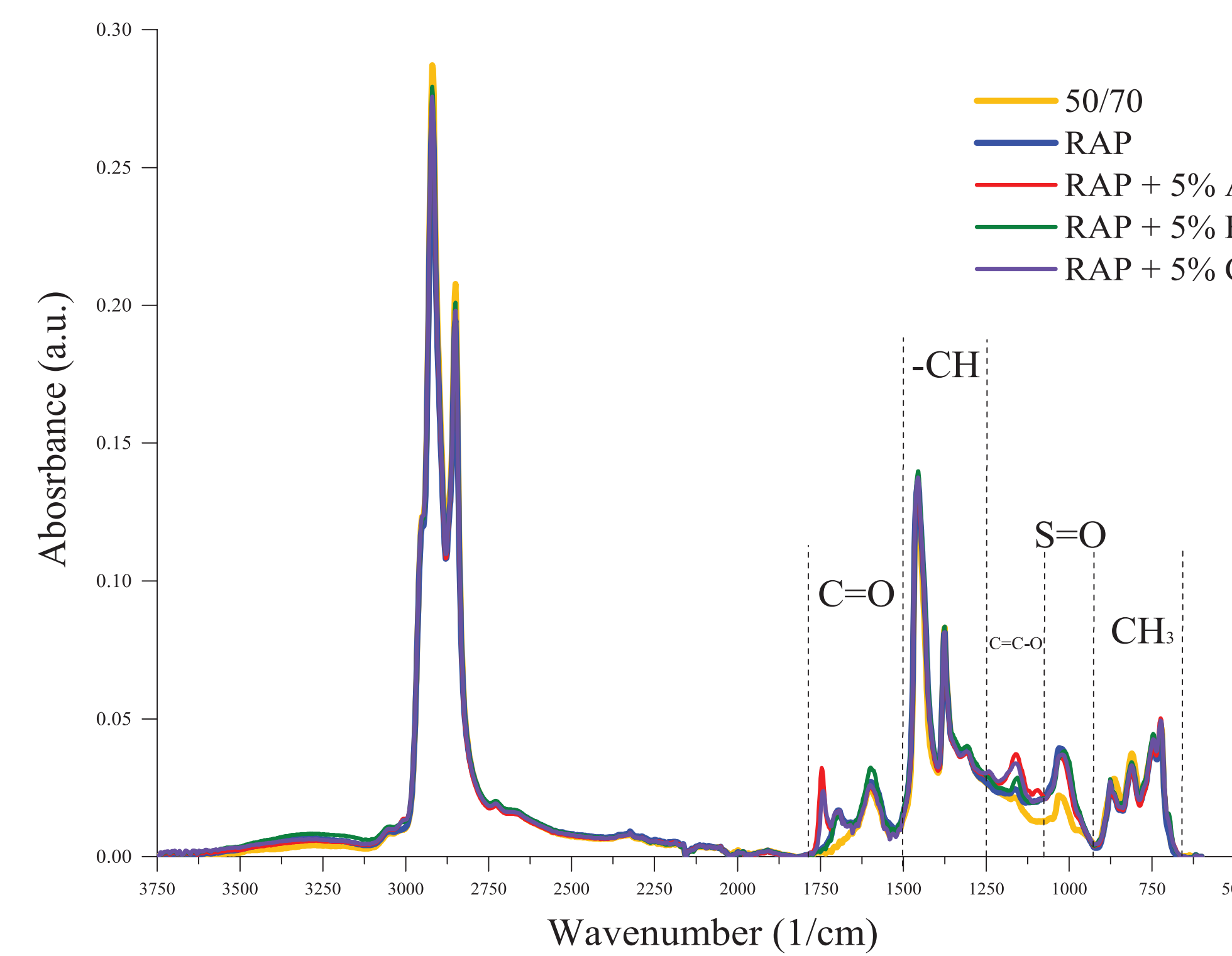


Results

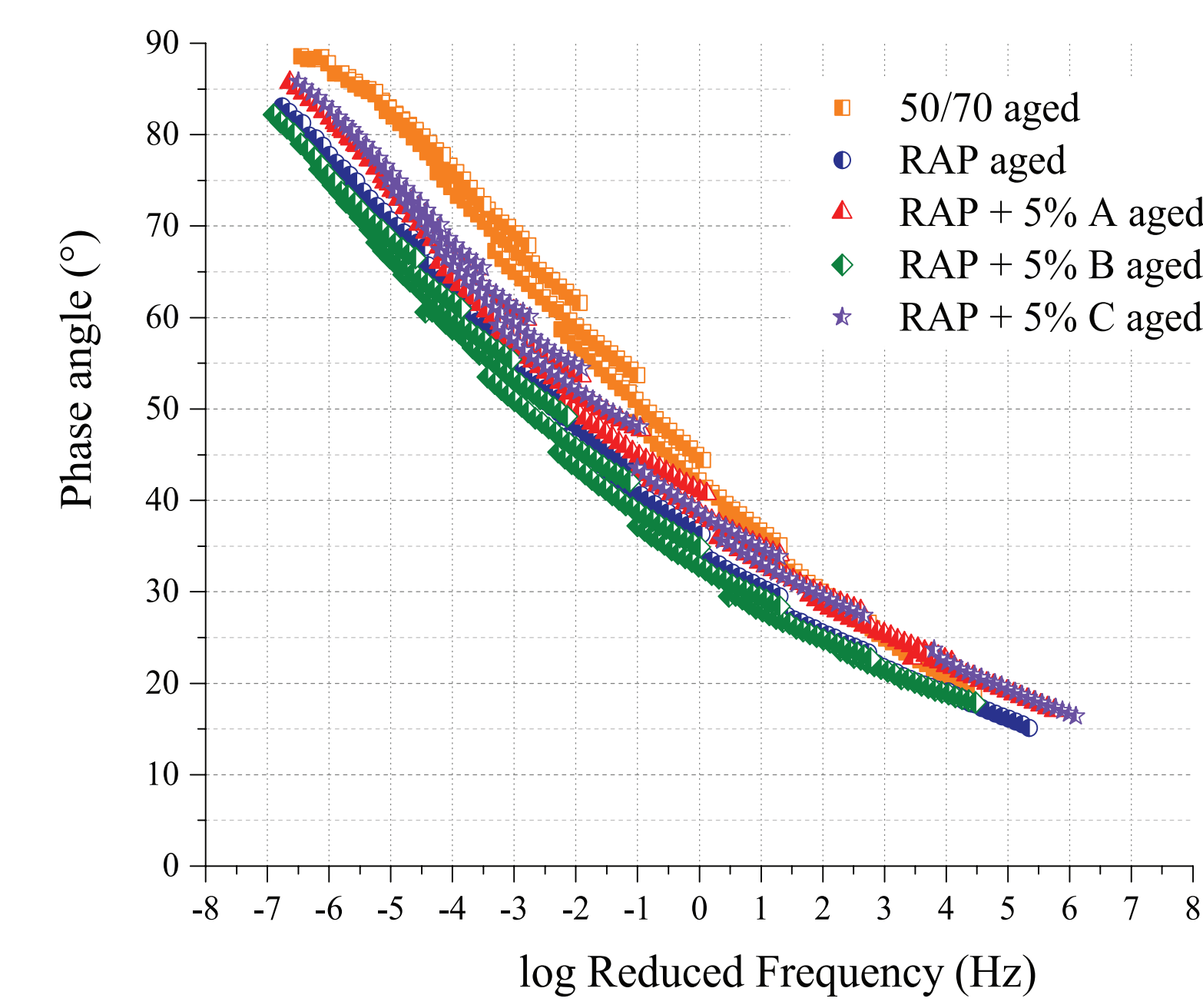
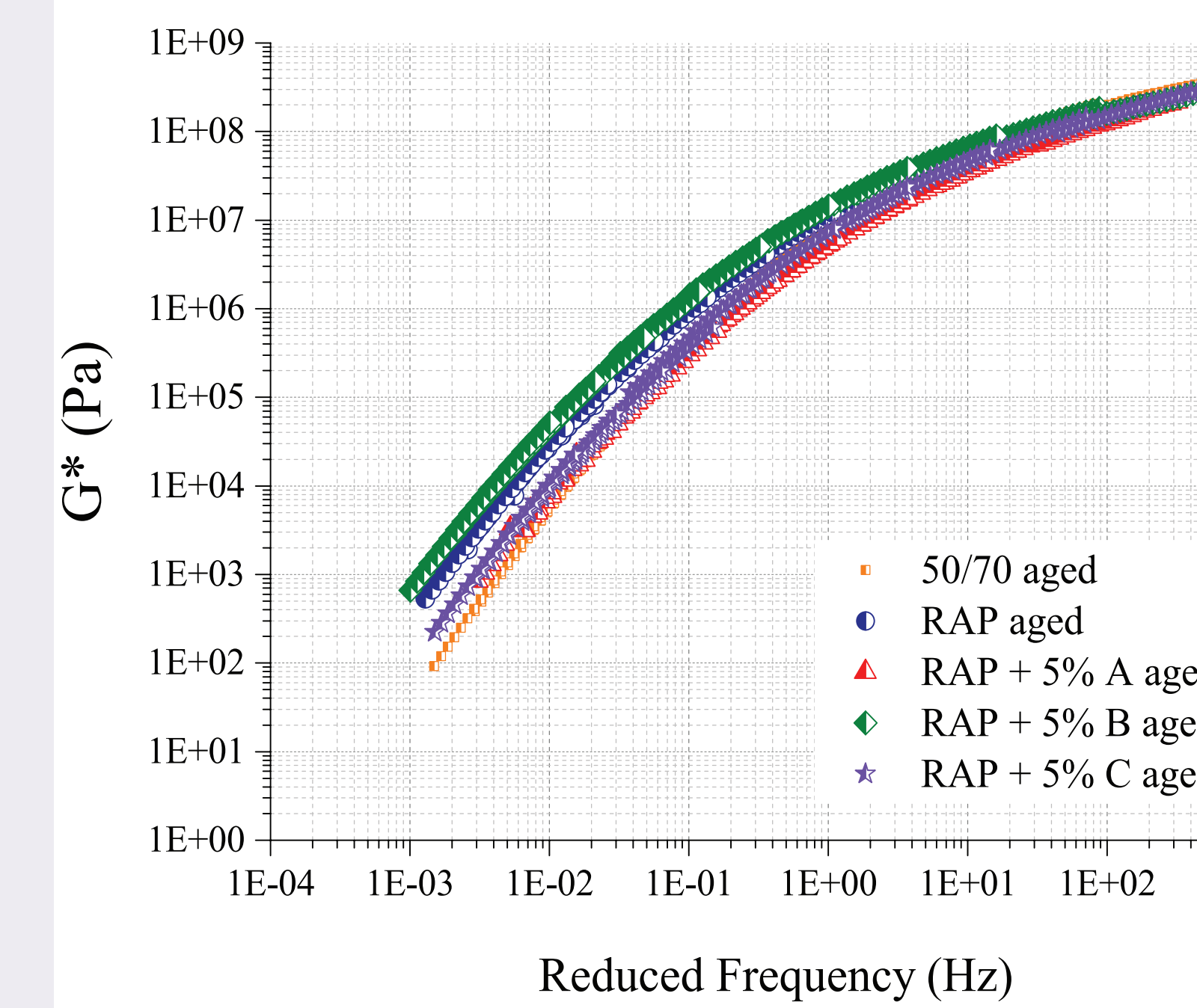
Molecular size distribution



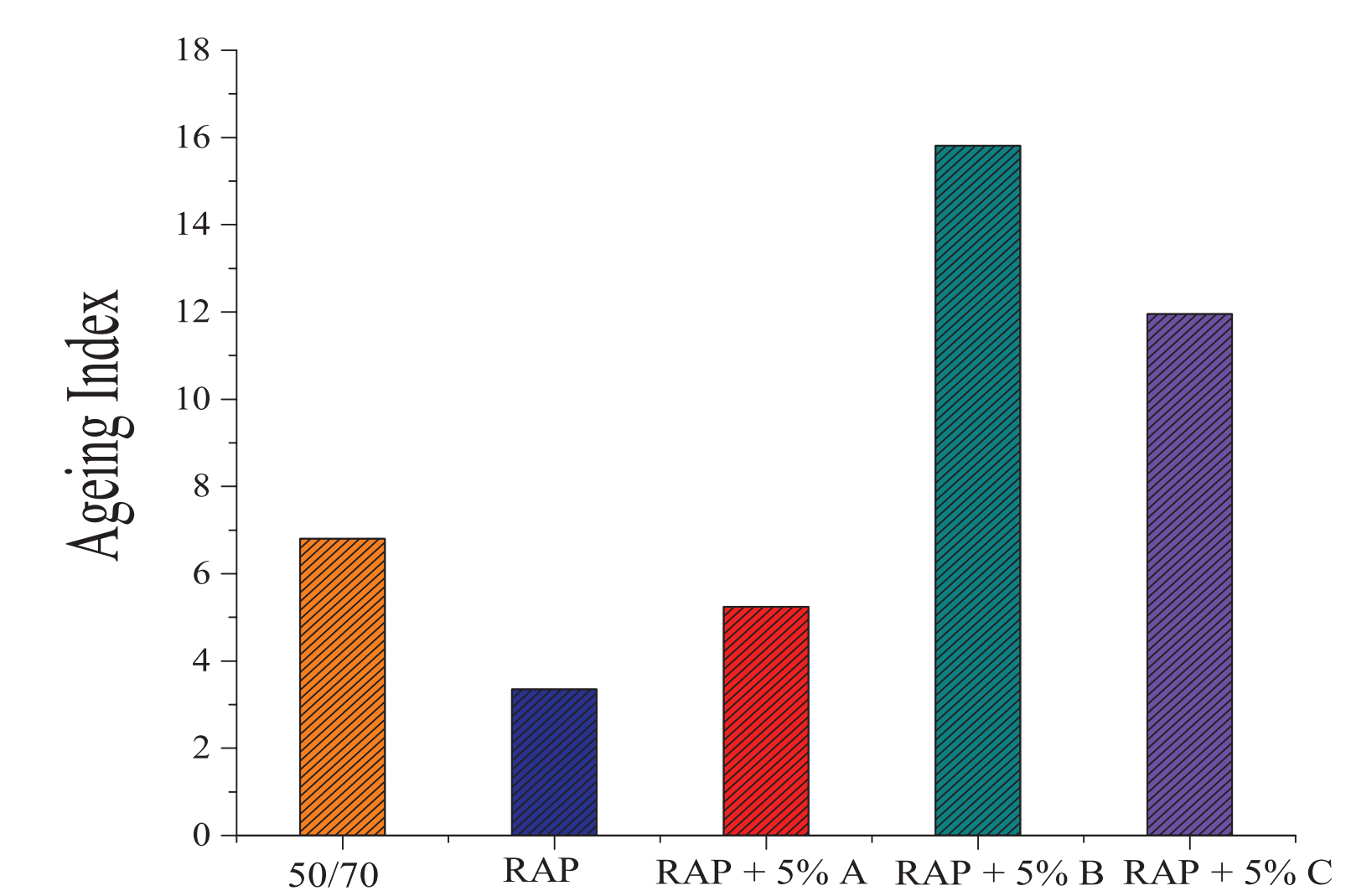
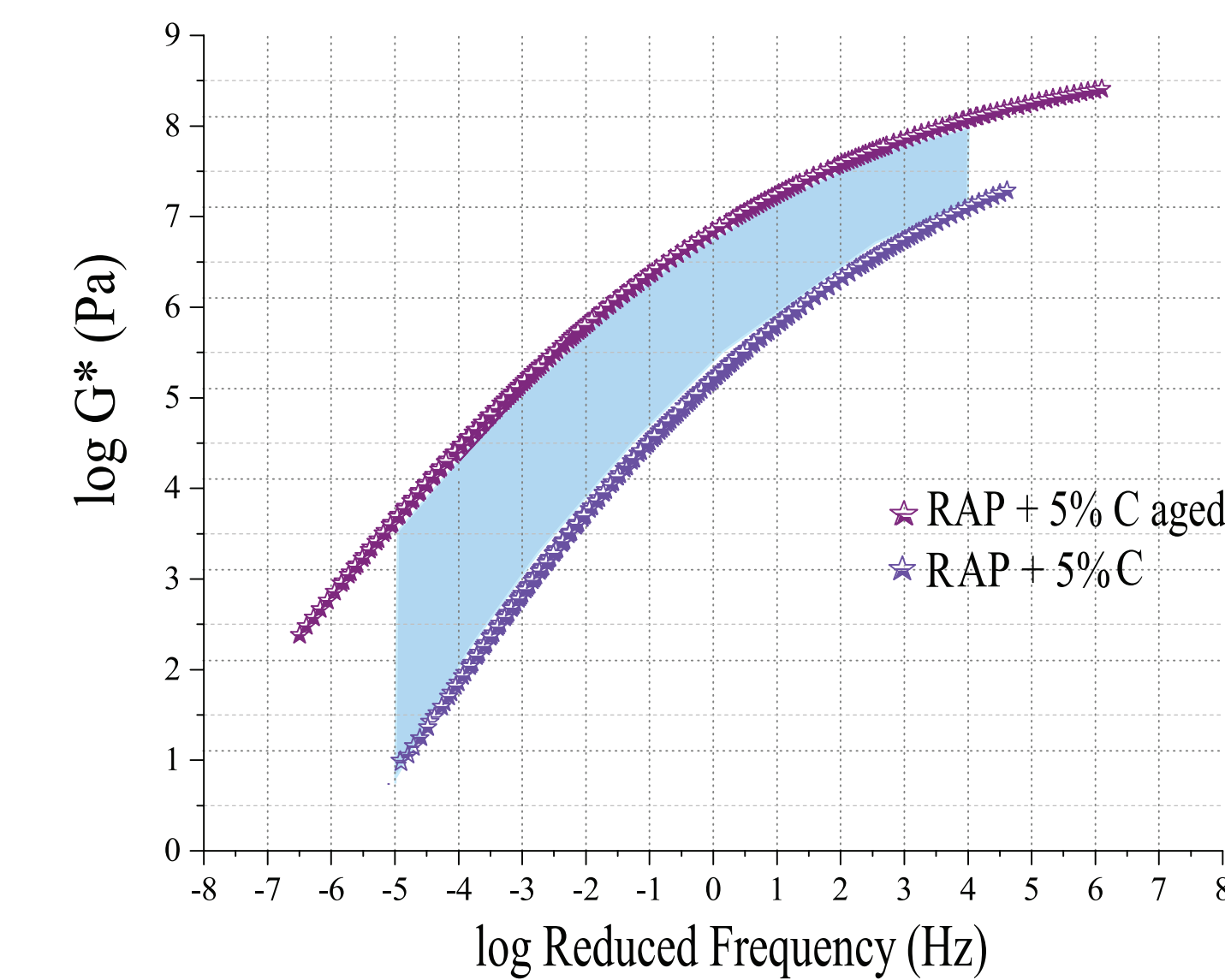
Chemical Ageing Index



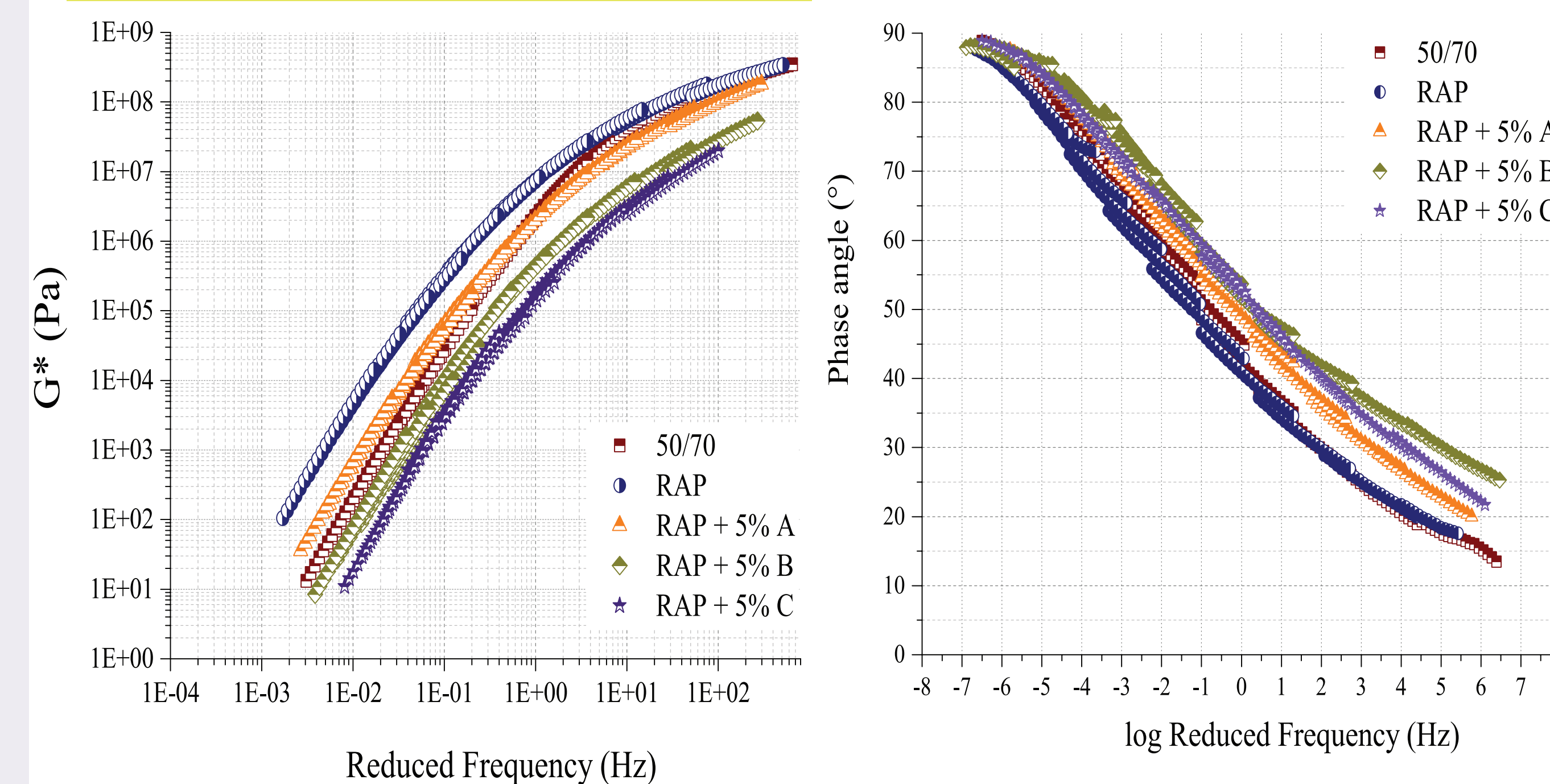
Rheological Measurements



Ageing Index



Rheological Measurements



Conclusions

This study demonstrated how ageing could have a significant effect on chemical and rheological behaviour of binders. It has been shown how mechanical changes due to rejuvenators were not caused by changes at chemical bonds/functional groups level but rather due to a rearrangement at higher molecular scale affecting the mechanical performances.

Acknowledgments

This research was funded by the Swiss federal office for the environment grant number UTF 489.19.14 / IDM 2006.2423.487

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