introducing a quantity of sample within the high-pressure sample cell defined within a high-pressure rotor sleeve of said high-pressure rotor in-situ positioned within a high-pressure loading and reaction device, the high-pressure sample cell spans the entire inner diameter of the rotor sleeve of said high-pressure rotor; and

sealing said sample within said high-pressure sample cell of said high-pressure rotor positioned within said high-pressure loading and reaction device at said pressure with a high-pressure sealing valve operatively coupled to said sample cell by turning same with a high-pressure thrust bearing, thereby sealing said valve.

5. The method of claim **4**, wherein sealing includes a pressure within the high-pressure sample cell greater than 1 bar.

6. The method of claim **4**, wherein introducing the sample includes opening the sealing valve of the high-pressure sample cell within the high-pressure rotor within said high-pressure loading and reaction device to recharge contents within the sample cell in-situ.

7. The method of claim **4**, further including the step of analyzing said sample present within said sample cell at said high pressure for a preselected time by introducing said high-pressure rotor containing said sample into an NMR probe.

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