

Pressure Chemical: Adding value to customer projects with advanced NMR expertise

Pressure Chemical has established a unique and successful relationship with Dr. Roberto R. Gil and the Center for Molecular Analysis of the Department of Chemistry at Carnegie Mellon University, which houses the Department's Nuclear Magnetic Resonance (NMR) Facility. Using these resources, Pressure can offer exceptional NMR services and expertise to its customers.

Carnegie Mellon has been a leader in the field of NMR research since the ground-breaking work of Aksel Bothner-By, who came to CMU in 1958. Bothner-By, a Günther Laukien Prize recipient, pioneered the world's first 600MHz instrument, developed the ROESY experiment, and made countless contributions to the field of NMR analysis and interpretation.

CMU Department of Chemistry's facility has flourished under the direction of Dr. Gil and maintains state of the art NMR capabilities (300 and 500 MHz), including the ability to run multinuclear (^1H , ^{13}C , ^{31}P , ^{19}F , ^{29}Si , ^{11}B , among others), high and low temperature experiments, 2D homonuclear and heteronuclear experiments, and diffusion experiments using pulsed field gradients.



**Dr. Roberto R. Gil, Director, NMR Facility,
Department of Chemistry at Carnegie Mellon University**

Pressure Chemical brings considerable value to customer projects via access to this advanced expertise. Together with Dr. Gil, Pressure has used the NMR facility for:

- **Real-time sampling** – *analysis can be scheduled such that samples are run as soon as they are dropped off; allowing in-process results in real-time.*
- **Structure analysis** – *the extent of CMU's facility allows for detailed structure determination experiments.*
- **Impurity profiles** – *byproduct identification and quantization can facilitate synthetic route selection and process optimization.*
- **Method development and reproducibility** – *the combined expertise of Dr. Gil and Pressure's scientists have resulted in order-of-magnitude improvements in method reproducibility.*

Pressure was the first industrial customer for this NMR facility and this in-depth relationship, providing access to world-class analytical services at a reasonable cost, is just one example of Pressure's commitment to solving our customers' most pressing scale-up problems.

About Pressure Chemical Company

Pressure Chemical Company is expert in the development of processes and services for the toll manufacture of custom organic chemicals, specialty monomers and polymers, and novel materials serving applications in the fields of additives, electronics, batteries, coatings, glass, oil, optics, cosmetics, and catalysts. We help our customers achieve their business goals by reducing the time and cost required to commercialize a new product. Our plant is flexible and uniquely able to handle a large variety of multi-step syntheses and challenging chemistries.

Give us a call when your project requires a full range of professional support including technical scale up collaboration, piloting, and interim and long-term manufacturing. Specializations include hydrogenation, hydroformylation, complex polymerizations, phosgenations, thionyl chloride chemistry and organo-metallic syntheses. For more information, go to **www.presschem.com**.