NATIONAL INSTITUTE OF CHEMISTRY
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Research&development and analytical services

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Services	Equipment/instruments	Already performed such services for the industry?	More information
IC quantitative & qualitative analysis	Dionex DX120 (anions)	YES	
IC quantitative & qualitative analysis	Metrohm Compact IC Flex 930 (anions)	YES	
IC quantitative & qualitative analysis	Metrohm Compact IC Flex 930 (cations)	NO	Amperometric detection is also possible
IC – development of active ingredients	Dionex DX120 (anions), Metrohm Compact IC Flex 930 (anions)	YES	
Determination of density by helium pycnometry	Micromeritics AccuPyc II 1340	YES	
pH value measurements	Metrohm 781 pH meter	YES	
Determination of water content	Metrohm 851 Titrando, 890 Titrando	YES	KF coulometric method & volumetric method
CHNS elemental analysis	Perkin Elmer CHNS Series II 2400	YES	
Determination of calorific value	IKA calorimeter	YES	
HPLC quantitative & qualitative analysis	Agilent 1260 Infinity	YES	DAD and RI detection
GC quantitative & qualitative analysis	Agilent 7890A	YES	TCD and FID detection

Services	Equipment/instruments	Already performed such services for the industry?	More information
TG quantitative & qualitative analysis	Perkin Elmer Pyris 1	YES	Implementation of hyphenated TG-FTIR analysis; possibility of measurements in different atmospheres
TG quantitative & qualitative analysis	Perkin Elmer STA 6000	YES	Implementation of hyphenated TG-FTIR analysis; possibility of measurements in different atmospheres
FTIR quantitative & qualitative analysis	Perkin Elmer Frontier	YES	Also ATR and DRIFTS measurements; implementation of *in situ* analysis
N_2 physisorption	Micromeritics Tristar II 3020	YES	Determination of BET specific surface area, total pore volume and pore size distribution
Characterization of heterogeneous catalysts by temperature-programmed techniques (TPR, TPO, TPD)	Micromeritics AutoChem II 2920	YES	Chemisorption measurements (dynamic method); implementation of temperature-programmed reactions (monitoring of the reaction progress by means of mass spectrometry)
EPR/ESR spectroscopic analysis	ADANI CMS 8400	NO	
UV/VIS spectrophotometry	Perkin Elmer Lambda 650, Lambda 465, Lambda 45P, Lambda 35	YES	Measurements with diffuse reflection technique; implementation of *operando* analysis
SEM-EDX analysis	Carl Zeiss FE-SEM Supra 35 VP	YES	

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TOC analysis	Teledyne Tekmar Torch	YES	
Determination of Kjeldahl nitrogen	Büchi Digest System K-437 & KjelFlex K-360	YES	
Determination of chemical oxygen demand (COD)	Dedicated laboratory equipment	YES	
Determination of biochemical oxygen demand (BOD)	Dedicated laboratory equipment	YES	
Determination of biogas and biomethane potential	BioProcess Control AMPTS II	YES	Possibility of implementing anaerobic fermentation at pilot level in batch and continuous-flow reactor systems
Establishing a wastewater treatment plant	Project plan	YES	
Optimization of a chemical reaction	Reactor equipment; gas/liquid chromatography	YES	Batch and continuous-flow reactor systems, possibility of conducting reactions at high temperatures and pressures, two- and three-phase processes
Development of a chemical reaction	Reactor equipment; gas/liquid chromatography	YES	Batch and continuous-flow reactor systems, possibility of conducting reactions at high temperatures and pressures, two- and three-phase processes

Services	Equipment/instruments	Already performed such services for the industry?	More information
Development of physico-chemical processes	Laboratory/pilot process equipment; dedicated analytical techniques	YES	Batch and continuous-flow processes

Further information:

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