

Basic tasks. Additions in 2006 (new agreement and contract extensions) are shown in **red**. Additions from 2007 are in **blue**. Status: May 2007

Name		Basic tasks	Assessment tasks (<i>Additional task 5</i>)
Bogdanovic-Radovic	Contract (first 2 years)	<p>Year 1: 1. Determine energy and angular ranges where new measurements are most urgently needed. 2. Preparation of target and scattering chamber for the experiment. 3. Detector calibration by measuring scattering chamber and detector solid angles. 4. Measure the N(p,p) non-Rutherford elastic scattering cross section up to 5 MeV and provide results to IBANDL.</p> <p>Year 2: 1. Measure the O(p,p) and Al(p,p) non-Rutherford elastic scattering cross section up to 5 MeV and provide results to IBANDL.</p> <p>2. Measure the N(α,α), O(α,α) and Al(α,α) non-Rutherford elastic scattering cross section between 2 and 8 MeV and provide results to IBANDL.</p>	nat C (p,p) 3.5 to 5 MeV, (α,α) up to 8 MeV
Chiari	Agreement	<p>Year 1: Install and test the multiple-detector scattering chamber.</p> <p>Year 2: Measure N(p,p) elastic scattering cross section at energies up to 6 MeV as function of scattering angle.</p> <p>Year 3: Measure C(p,p) elastic scattering cross section in energy range 3 - 6 MeV as a function of scattering angle. Measure F(p,p) and Li(p,p) elastic scattering cross sections at energies up to 6 MeV as a function of scattering angle</p>	²³ Na(p,p) ¹⁹ F, ⁷ Li, ⁶ Li
Gurbich	Contract (first 2 years)	<p>Year 1: 1. Search literature and include 20 additional works in IBANDL database. 2. Evaluate differential cross sections for elastic scattering of alphas on O and Si, based on critical assessment of existing experimental data and on nuclear model calculations, and supply the results in tabular form to NDS. 3. Measure the differential cross section of (d,p) and (d,α) reactions on Al, as well as the thick-target gamma-ray yield</p>	nat C, nat O (d,p) (d,α)

		<p>on Al, in the energy range 1 to 2 MeV, and include the new data in IBANDL.</p> <p>Year 2: 1. Continue support for IBANDL database by adding new data sets from literature or supplied by authors and by including improvements of database structure 2. Evaluate differential cross sections for elastic scattering of protons on N, based on critical assessment of existing experimental data and on nuclear model calculations, and supply the results in tabular form to NDS 3. Measure the differential cross section of (d,p) and (d,α) reactions on N in the energy range from 1 to 2 MeV with an energy step of 20 KeV, and include the new data in IBANDL.</p> <p>Year 3: 1. Continue support for IBANDL database by adding new data sets from literature or supplied by authors and by including improvements of internal structure of database. 2. Extend evaluation of differential cross sections for elastic scattering of protons on N to energy range 3.5 – 5 MeV. 3. Evaluate differential cross sections for elastic scattering of protons on B-10, B-11 and F.</p>	
Jeynes	Agreement	<p>Year 1: Measure and evaluate Mg(p,p). Experiment up to 4 MeV at 2 angles as a benchmark.</p> <p>Year 2: Measure and evaluate Si(α,α). Experiment at 2 angles. Extract cs from bulk target data using Bayesian Inference. Evaluate stopping cs using Sb implanted ref. Standard from IRMM Geel. Measure Ti(α,α), V(α,α) and $^{14}\text{N}(\alpha,\alpha)$ up to 6 MeV at 2 angles from bulk targets using BI.</p> <p>Year 3: Measure Ti(p,p), V(p,p) and ^{14}N (p,p) to 4MeV at 2 angles from bulk targets using BI.</p>	
Kokkoris	Agreement	<p>Year 1: Measure $^{10,11}\text{B}(\text{d,p})$ and (d,α) reactions (on natural and enriched targets) at 8 angles from 900 to 2000 keV.</p> <p>Year 2: Measure $^{14}\text{N}(\text{d,p})$, (d,α), (d,d).</p> <p>Year 3: Measure $^{19}\text{F}(\text{d,p})$, (d,α), $^6\text{Li}(\text{d,p}),(\text{d},\alpha)$.</p>	$^{10,11}\text{B}$, ^6Li , ^7Li (d,p) (p, α) (d, α), ^{14}N , $^{19}\text{F}(\text{d,p})$, (d, α), nat S(NRA)
Lopes Ramos	Contract (first 2 years)	1. Obtain appropriate samples and perform detailed compositional analysis by PIXE and RBS.	nat N (p,p) (α,α)

		<p>2. Measure N(p,p) elastic cross section by thin film technique in energy range 500 - 2500 keV at scattering angles 130 - 160 degrees in 10 deg. steps.</p> <p>3. Develop and validate "bulk sample method" for proton elastic scattering cross-section measurements.</p> <p>4. Apply bulk sample method to measurement of Li(p,p) elastic scattering cross section.</p> <p>Year 2: 1. Perform reproducibility tests for $^{14}\text{N}(p,p_0)^{14}\text{N}$ cross sections measured during the first year using thin films</p> <p>2. Application of the previously developed algorithm to the determination of $^{14}\text{N}(p,p_0)^{14}\text{N}$ cross sections using a bulk nitride sample and comparison of results with the thin film measurements of the first year</p> <p>3. Benchmarking of evaluated/measured (p,p) cross sections in the 500 – 2500 keV range for C, N and Si using standard bulk samples</p>	
Mayer	Agreement	<p>Year 1: Identify most important cross sections for incident p, d, He-3 and alpha particles for backscattering, elastic recoil analysis, and nuclear reactions.</p> <p>Year 2: Analysis and synthesis of assessments from participants, and preparation of manuscript for submission to international journal.</p> <p>Year 3: Assessment of the existing data (experimental and theoretical) for incident ^3He, alphas and heavier ions.</p>	<p>B (p,p) and (α,α) Be (p,p) and (α,α) Be, B, nat C, nat O, D (^3He, charged particle)</p>
Rauhala	Agreement	<p>Year 1: Measure O(α,α) at 7-9 MeV over wide angular region.</p> <p>Year 2: Measure D(p,p) at 0.5-1 and 2-4 MeV at several angles > 100 deg. in cooperation with Vickridge and Mayer.</p> <p>Year 3: Measure nuclear reactions of $^3\text{He} + \text{d}$ system.</p>	<p>D (p,p) B (p,p) and (α,α)</p>
Shi	Contract (first 2 years)	<p>Year 1: 1. Measurement of the differential elastic scattering cross section of alphas incident on D and T in the energy range 3 - 8 MeV at scattering angle of 30 degrees.</p> <p>2. Measurement of the differential elastic scattering cross</p>	<p>D,T (α,α), (p,p)</p>

		<p>section of protons incident on D and T in the energy range 1 - 3 MeV at scattering angles of 151 and 165 degrees.</p> <p>3. Provide results to IAEA Nuclear Data Section in tabular form for inclusion to IBANDL database.</p> <p>Year 2: Measurement of the differential elastic scattering cross section of alphas incident on D and T in the energy range 3 - 8 MeV at scattering angle of 20 and 40 degrees.</p>	
Vickridge	Agreement	<p>Year 1: Identification of most important reactions based on needs for NRA and feasibility of measurements, and identification of optimal energy and angular ranges, with input from first RCM. Preparation of trial targets and tests of target stability under the beam. Evaluation of interferences from parasite reactions.</p> <p>Year 2: Measurement of cross sections for deuteron-induced reactions on ^{13}C, and inclusion of results in IBANDL. Preparation of thin ^{15}N films for measurements in Year 3.</p> <p>Measure D(p,p) at 1-2 MeV at several angles > 100 deg. in cooperation with Rauhala and Mayer.</p> <p>Year 3: Measurement of cross sections for deuteron-induced reactions on ^{15}N, and inclusion of results in IBANDL.</p>	$^{13}\text{C}, ^{15}\text{N}$ (p,p) (α,α) (d,p) (p, α) (d, α)