

SURFACE PROTECTION

III. Executive Summary (limited to one page)

NDSU proposes Phase 2 funding for the Center for Surface Protection (CSP). Since its establishment in 2006, the Center has engaged private sector participants in economically significant materials research and development. The Center for Surface Protection works with private sector partners to address new materials development, industrial product issues, and provides technical services in the form of testing. The Center is anchored by the world-class reputation and technical expertise of both the NDSU Department of Coatings and Polymeric Materials (CPM) and the NDSU Center for Nanoscale Science and Engineering (CNSE).

In the January 2006 ED-COE proposal, \$4,725,985 was requested to work with a number of private sector partners to engage in industries ranging from window/door manufacturing to re-manufacturing of products for equipment. The Center funding was reduced and thus the number of private sector partners had to be trimmed commensurate with the funding. As a result of this action, the CSP is requesting Phase 2 funding to address more industrial groups as well as expand relationships with current partners in new market areas.

The CSP is focused on market-driven commercialization research for the private sector consistent with the intent of the ED-COE program. The CSP performs cutting edge research by leveraging existing capabilities built primarily with federal funding. Such research provides opportunities for companies to grow existing markets as well as enter new markets. The CSP is currently focused on hard coatings (HC) and soft coatings (SC).

Hard Coatings (CSP-HC). New coatings systems being proposed will demonstrate improved corrosion, erosion, and wear properties relative to the current state-of-the-art coatings systems. These technologies will serve applications such as food processing equipment, defense and armaments, and aerospace. The hard coatings program is aimed to partner with two world leaders in the hard coatings field. Access to their resources and experience will significantly accelerate research, product development, and commercialization.

Soft Coatings (CSP-SC). CSP will work with North Dakota companies such as Technology Application Group (TAG) [involving magnesium surfaces and related testing services] and Marvin Windows and Doors [new coatings development and testing services]. CSP will also conduct research for Akzo-Nobel on new coatings. The CSP partners and their proposed applications are discussed in the Section V. Center Description.

Appendix A: Center for Surface Protection – Budget and Justification

REQUESTED OF THE ND ED-COE PROGRAM	Year 1	Year 2	Year 3	Total
Personnel (Staff, Faculty, Student interns)	296,968	454,538	567,001	1,318,507
Materials, Equipment, Rent and Recharge Center Fees	374,693	46,400	45,400	466,493
Travel	15,000	15,000	15,000	45,000
Remodeling and Furnishing Labspace	55,000	5,000	5,000	65,000
COE Business Development	35,000	35,000	35,000	105,000
TOTAL REQUESTED OF THE ND ED-COE PROGRAM	776,661	555,938	667,401	2,000,000
MATCHING FUNDS				
Private-sector cash match for projects				
Akzo Nobel Aircraft Coatings	0	0	50,000	50,000
Private-sector in-kind/in-lieu of cash match for projects				
Praxair	100,000	100,000	100,000	300,000
Sulzer-Metco	655,650	655,650	655,650	1,966,950
Marvin Windows and Doors	60,000	60,000	60,000	180,000
Akzo Nobel Aircraft Coatings	100,000	200,000	300,000	600,000
Technology Applications Group (TAG)	25,000	25,000	25,000	75,000
New Research Projects with other Private Sector Companies	65,000	65,000	65,000	195,000
Federal Funds Facilitated w/ Private Sector	265,880	242,319	124,851	633,050
TOTAL MATCHING FUNDING	1,271,530	1,347,969	1,380,501	4,000,000

Budget Justification for Funding Requested from ED-COE Program

Personnel - includes staff, faculty, and students for work on CSP private-sector partnered projects.

Materials Equipment, Rent and Recharge Center Fees - these expenses include the supplies and materials needed for CSP research projects, capital equipment expenditures, and rent for additional space.

Travel - these expenses include business travel for meetings with private sector partners and research symposium for presentation of results.

COE Business Development - these expenses include market analysis, marketing, consultant and legal fees, and business plan development. More detail is given in Appendix C, p.38.

Private-Sector Matching: The matching is based on commitments noted in the letter of commitment and estimates of future interest. The "New research projects with other private sector partners" in-kind match represents opportunities currently in the discussion/exploratory phase with both current and potential CSP partners, but which are not yet ready to be formalized into official CSP projects. Such opportunities speak to the need for a level of flexibility within the Center and are the basis for future sustainability.

Federal Matching: Funding already secured for the anticipated award period.