

Introduction to NK Database

Optical constants or dielectric constants are not constant. They are a function of wavelength and physical states such as physical density, crystallinity, grain size and orientation, etc. The most obvious case is when you compare thin film with bulk materials. Therefore, it is critical to have your own materials measured under every condition to learn the true optical constants. The database of optical properties (we call NK Database here) established by us is only for your reference. It is a good idea to learn the general dispersion behaviors for materials, which in turn will help you develop optical models to study optical properties of the materials processed under your specific processing conditions. But if you directly apply these data to your design, you do it at your own risk. We recommend that you always measure optical properties by yourself. When you need help, we are here to provide **Analytical Service** for such purpose.

We hope this website become a starting point for most of the new comers in the ellipsometry field. You can visit our website www.angstec.com to feel free to use it. If you have any comments or suggestions on our **NK Database**, please let us know.

To search our database, you can start from element periodic table and simply click elements button or use category tool. Here is a category listed at our website:

Oxides	II-VI Compounds	Photoresist
Metals	III-V Compounds	Polymer-Polyimide
Glasses	Silicon and Its Compounds	VUV-DUV-Infrared
Nitrides	Aluminum and Its Compounds	Thermo-Optical
Fluorides	Germanium and Its Compounds	Miscellaneous

To output graph, you can choose to plot refractive index (N) and extinction coefficient (K) vs different unit such as micrometer, nanometer, wavenumber or electron volts (eV). In addition, you can also select dielectric constants vs eV to make a plot. Here is an example by searching Titanium and showing plots for BST.

